

VPDES PERMIT FACT SHEET

This document gives the pertinent information concerning the **reissuance** of the VPDES permit listed below. This permit is being processed as a **minor municipal** permit. The effluent limitations contained in this permit will maintain the Water Quality Standards of 9 VAC 25-260-00 et seq. The discharge results from the operation of a **0.035 MGD rotating biological contactor**. This permit action consists of reducing the monitoring frequencies for total suspended solids and BOD₅, adding ammonia limitations, adding an *E. coli* limit, reducing the ground watering monitoring frequency, and revising the special conditions. (SIC Code: 4952)

1. **Facility Name and Address:**

Bennie's Mobile Home Park STP

6080 Campbell Highway

Lynchburg, Virginia 24501

Location: Route 501, 2 miles south off Rt. 460, Campbell County

2. **Permit No:** VA0061042 Existing Permit Expiration Date: August 17, 2010

3. **Owner Contact:** Byron B. "B.B." Bunnell, General Manager (434) 846-5642, bse7en@aol.com

4. **Application Complete Date:** February 10, 2010

Permit Drafted By: Becky L. France, Environmental Engineer Senior

Date: April 28, 2010

DEQ Regional Office: Blue Ridge Regional Office

Reviewed By: Kip D. Foster, Water Permit Manager

Reviewer's Signature: *[Signature]* Date: 4/30/2010

Public Comment Period Dates: From _____ To _____

5. **Receiving Stream Classification:**

Receiving Stream: Opossum Creek (River Mile: 4.83)

Watershed ID: VAC-H05R

River Basin: James River (Middle)

River Subbasin: NA

Section: 11e

Class: III

Special Standards: PWS

7-Day, 10-Year Low Flow:	0.30 MGD	7-Day, 10-Year High Flow:	0.96 MGD
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1-Day, 10-Year Low Flow:	0.26 MGD	1-Day, 10-Year High Flow:	0.85 MGD
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30-Day, 10-Year Low Flow:	0.42 MGD	30-Day, 10 Year High Flow:	1.3 MGD
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30-Day, 5-Year Low Flow:	0.58 MGD	Harmonic Mean Flow:	1.5 MGD
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Tidal:	No	303(d) Listed:	Yes
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Attachment A contains a copy of the flow frequency determination memorandum.

6. **Operator License Requirements:** IV

7. **Reliability Class:** I8. **Permit Characterization:**

- ☒ Private ☐ Interim Limits in Other Document
☐ Federal ☐ Possible Interstate Effect
☐ State
☐ POTW
☐ PVOTW

9. **Wastewater Treatment System:** A description of the wastewater treatment system is provided below. See **Attachment B** for the wastewater treatment schematics and **Attachment C** for a copy of the site inspection report. Treatment units associated with the discharge are listed in the table below.

Table I
DISCHARGE DESCRIPTION

Outfall Number	Discharge Source	Treatment (Unit by Unit)	Flow (Design) (MGD)
001	Bennie's Mobile Home Park STP	rotating biological contactor (RBC) secondary clarifier polishing pond equalization basin (sludge holding tank) chlorination post aeration dechlorination	0.035

Bennie's Mobile Home Park STP treats domestic sewage from a mobile home community of 200 people. The facility began operation in 1980. Each mobile home has its own 1000 gallon septic tank which gravity flows to the wastewater treatment plant. The 0.035 MGD facility consists of a rotating biological contactor (RBC) followed by a polishing pond, chlorination, post-aeration, and dechlorination. Occasionally, partially treated wastewater is pumped from the polishing and emergency overflow ponds and hauled to the Lynchburg Regional WWTP for further treatment and final disposal. Chlorinated effluent flow through a weir/sample box and is discharged to Opossum Creek.

10. **Sewage Sludge Use or Disposal:** Sludge from the rotating biological contactor (RBC) is pumped to a 5,000-gallon holding tank. The holding tank is pumped about once per year. Septage from the septic tanks is pumped about once every three years and hauled to a POTW for further treatment and final disposal.

11. **Discharge Location Description:** A USGS topographic map which indicates the discharge location, any significant dischargers, any water intakes, and other items of interest is included in **Attachment D**. The latitude and longitude of the discharge is N 37°20'50", E 79°06'52".

Name of Topo: Rustburg, Virginia Number: 106D

12. **Material Storage:** Calcium hypochlorite tablets are stored inside in a watertight container.
13. **Ambient Water Quality Information:** Flow frequencies for the receiving stream, receiving stream classification and 303(d) listing information, and ground water data are discussed below.

Flow Frequencies

Bennie's Mobile Home Park STP discharges to Opossum Creek near the railroad bridge south of Babcock, Virginia. The USGS conducted several flow measurements on Beaver Creek near the Route 660 bridge near Babcock, Virginia from 1981 to 1984. These measurements correlated well with the same day daily mean values from three continuous record gauges. These gauges are the Big Otter River near Evington, VA (#02061500), the Buffalo River near Tye River, VA (#02027800), and Falling River near Naruna, VA (#02025900). The flow frequencies from the reference gauges were used in a regression analysis to determine the flow frequencies at the measurement site. See **Attachment A** for a copy of the flow frequency analysis memorandum.

Receiving Stream Water Quality Data

STORET Station 2-OPP000.16 is the nearest ambient water quality monitoring station, and it is located on Opossum Creek off the Route 460 bridge in Campbell County. The 90th percentile temperature and pH values used in the antidegradation wasteload allocation spreadsheet were determined from STORET station data between 2000 and 2009. Average hardness was determined from STORET station data between 2000 and 2003. **Attachment E** contains temperature, pH, and hardness STORET data used in wasteload allocations.

Water Use Classification

Bennie's Mobile Home Park STP discharges into the James River/Beaver Creek/Back Creek (VAC-H05R) as described in the 2008 303(b)/303(d) Water Quality Assessment Integrated Report (**Attachment E**). The segment of Opossum Creek from its mouth on the James River upstream to the Route 660 crossing has been listed on Part I of the 303(d) list for excessive counts of fecal coliform bacteria.

Ground Water Data

The permittee has conducted upgradient and downgradient ground water monitoring in the vicinity of the polishing pond from 2007 through 2010 to determine if there is any leakage to ground water. There are some ground water data that exceed the ground water standards in upgradient and downgradient wells. But, there may be an increase in chloride in the downgradient wells. The permittee will be conducting a statistical evaluation of the ground water data and a corrective action plan if there is leakage causing a water quality threat to receptors. See **Attachment F** for a summary and discussion of ground water data collected at the facility.

14. **Antidegradation Review and Comments:** Tier I _____ Tier II X Tier III _____

The State Water Control Board's Water Quality Standards includes an antidegradation policy (9 VAC 25-260-30). All state surface waters are provided one of three levels of antidegradation protection. For Tier I or existing use protection, existing uses of the water body and the water quality to protect these uses must be maintained. Tier II water bodies have water quality that is better than the water quality standards. Significant lowering of the water quality of Tier II waters is not allowed without an evaluation of the economic and social impacts. Tier III water bodies are exceptional waters and are so designated by regulatory amendment. The antidegradation policy prohibits new or expanded discharges into exceptional waters.

The antidegradation review begins with Tier determination. Opossum Creek is listed as a public water supply in the segment where the discharge is located. Opossum Creek in this segment (VAC-HO5R) is listed on Part I of the 303(d) list for exceedances of the bacteria water criteria. In accordance with Guidance Memorandum 00-2011, bacteria should not be used to determine tier unless there is clear and convincing evidence that the elevated bacteria numbers are due to inadequately disinfected human waste. Excluding bacteria, there is no evidence that the receiving stream does not meet or exceed water quality standards. Therefore, this segment of the Opossum Creek is classified as a Tier II water, and no significant degradation of existing water quality is allowed.

For purposes of aquatic life protection in Tier II waters, "significant degradation" means that no more than 25 percent of the difference between the acute and chronic aquatic criteria values and the existing quality (unused assimilative capacity) may be allocated. For purposes of human health protection, "significant degradation" means that no more than 10 percent of the difference between the human health criteria and the existing quality (unused assimilative capacity) may be allocated. The antidegradation baselines for aquatic life and human health are calculated for each pollutant as follows:

Antidegradation baseline (aquatic life) = 0.25 (WQS – existing quality) + existing quality

Antidegradation baseline (human health) = 0.10 (WQS – existing quality) + existing quality

Where:

"WQS" = Numeric criterion listed in 9 VAC 25-260-00 et seq. for the parameter analyzed

"Existing quality" = Concentration of the parameter being analyzed in the receiving stream

When applied, these "antidegradation baselines" become the new water quality criteria in Tier II waters, and effluent limits must be written to maintain the antidegradation baselines for each pollutant. Antidegradation baselines have been calculated as described above and included in **Attachment G**.

Bennie's Mobile Home Park STP was built in 1980 after the antidegradation policy requirements set forth in the Clean Water Act. The antidegradation requirements apply to existing uses attained after November 28, 1975. Antidegradation guidelines are applicable and have been applied to this permit reissuance. Water quality based effluent limits for total residual chlorine

(TRC) and ammonia have been established in compliance with antidegradation requirements set forth in 9 VAC 25-260-30 of the water quality standards regulations. In accordance with antidegradation policy, pH will be maintained within the range of 6.0 S.U. and 9.0 S.U. The antidegradation review was conducted as described in Guidance Memo 00-2011, and complies with the antidegradation policy contained in Virginia's Water Quality Standards.

15. **Site Inspection:** Date: 9/30/09 Performed by: Becky L. France
Attachment C contains a copy of the site inspection memorandum.
16. **Effluent Screening and Limitation Development:** DEQ Guidance Memorandum 00-2011 was used in developing all water quality based limits pursuant to water quality standards (9 VAC 25-260-5 et seq.). Refer to **Attachment G** for the antidegradation wasteload allocation spreadsheet and effluent limit calculations. See **Table II** on pages 14-15 for a summary of limits and monitoring requirements.

A. **Mixing Zone**

Effluent is discharged into Opossum Creek. The Agency mixing zone program, MIXER, was run to determine the percentage of the receiving stream flow that can be used in the antidegradation wasteload allocation calculations. The program indicated that 54.58 percent of the 1Q10 and 100 percent of the 7Q10 may be used for calculating the acute and chronic antidegradation wasteload allocations (AWLAs). A copy of the printout from the MIXER run is included in **Attachment G**.

B. **Effluent Limitations for Conventional Pollutants**

Flow -- The permitted design flow of 0.035 MGD for this facility is taken from the previous permit and the application for the reissuance. In accordance with the VPDES Permit Manual, flow is to be estimated and reported each day.

pH -- The pH limits of 6.0 S.U. minimum and 9.0 S.U. maximum have been continued from the previous permit. These limits are based upon the water quality criteria in 9 VAC 25-260-50 for Class III receiving waters and are in accordance with federal technology-based guidelines, 40 CFR Part 133, for secondary treatment. The monitoring frequency of 1/day via grab samples has been continued from the previous permit.

Total Suspended Solids (TSS) -- TSS limits of 30 mg/L (4000 g/d) for monthly average and 45 mg/L (6000 g/d) for weekly average are based upon technology-based requirements for municipal dischargers with secondary treatment required in accordance with 40 CFR Part 133 and have been continued from the previous permit. Since the TSS data collected during the permit term were significantly below the permit limits, the monitoring frequency has been reduced to 1/ 6 months. Refer to **Attachment H** for a compilation of monitoring data and a discussion of the reduced monitoring criteria.

Biochemical Oxygen Demand (BOD₅), Dissolved Oxygen (DO) -- Since there has been a decrease in the flow frequencies at the outfall, the new data have been entered into the Regional Water Quality Model for Free Flowing Streams (Version 4.0) to reassess the BOD₅ limits. A copy of the model output results is found in **Attachment I**. An initial DO of 6.0 mg/L, a TKN of 20 mg/L, and a CBOD₅ of 25 mg/L (comparable to a BOD₅ of 30 mg/L), were used in the model input. The model predicted a DO sag at the initial discharge point to 7.241 mg/L. The initial drop of 0.2 from the baseline complies with antidegradation policy.

The BOD₅ limits are technology-based requirements for municipal dischargers with secondary treatment. The BOD₅ of 30 mg/L (4000 g/d) monthly average and 45 mg/L (6000 g/d) weekly average have been continued from the previous permit. The minimum dissolved oxygen limit of 6.0 mg/L has also been continued from the previous permit. DO will continue to be monitored daily via grab samples.

C. Effluent Limitations for Toxic Pollutants

Ammonia as N -- The need for an ammonia limit has been reevaluated using revised water quality criteria and flows. The acute and chronic water quality criteria and antidegradation wasteload allocations were calculated and are included in the spreadsheet in **Attachment G**. As recommended in Guidance Memo 00-2011, a default ammonia concentration of 9 mg/L was input into the STATS program. The acute and chronic AWLAs during the high flow months of January through May and the low flow months of June through December were entered into the STATS program to determine if limits are necessary.

The STATS program output indicated that ammonia as nitrogen limits of 12 mg/L monthly average and 12 mg/L weekly average are needed during the months of June through December. The program output indicated that ammonia as nitrogen limits are not needed during the months of January through May. A four-year schedule of compliance has been included to allow the permittee time to meet the ammonia limitations. Once the limits become effective, grab samples shall be collected 1/month.

E. coli -- A bacteria TMDL for Opossum Creek watershed allocates an *E. coli* wasteload allocation (6.10×10^{10} cfu/year) that is derived from a bacteria water quality criterion. This allocation was derived by multiplying the design flow (0.035 MGD) by the bacteria water quality standards (126 cfu/100 mL) for *E. coli*. The TMDL report indicates that an *E. coli* limit of 126 cfu/100 mL will ensure compliance with the bacteria TMDL for the discharge. Refer to **Attachment E** for information from the bacteria TMDL report.

A monthly geometric average limit of 126 cfu/100 mL for *E. coli* has been added to the permit. Monitoring 1/week shall be via grab samples.

Total Residual Chlorine (TRC) -- The TRC limits in the previous permit were reassessed with the AWLAs that were determined from the decreased stream flow

frequencies. The revised acute and chronic AWLAs and a number to force a limit were input into the Agency's STATS program. The program output indicated that permit limits of 0.019 mg/L monthly average and 0.023 mg/L weekly average are needed in the permit. These more stringent limits replace the previous permit limits. Since the facility dechlorinates the effluent, a compliance schedule is not needed to meet these limitations. Effluent TRC will continue to be monitoring 1/day via grab samples.

17. **Basis for Sludge Use and Disposal Requirements:** Since the facility proposes to pump and haul sludge to a POTW, there are no sludge limits or monitoring requirements.
18. **Antibacksliding Statement:** Since there are no limitations less stringent than the previous permit, the permit limits comply with the antibacksliding requirements of 9 VAC 25-31-220 L of the VPDES Permit Regulation.
19. **Compliance Schedules:** A compliance schedule has been included to allow the permittee time to comply with the ammonia as nitrogen limitations.
20. **Special Conditions:** A brief rationale for each special condition contained in the permit is given below.

A. **Additional Total Residual Chlorine (TRC) Limitations and Monitoring Requirements (Part I.B)**

Rationale: This condition requires that the permittee monitor the TRC concentration after chlorine contact. In accordance with 40 CFR 122.41(e), permittees are required, at all times, to properly operate and maintain all facilities and systems of treatment in order to comply with the permit. It specifies an increase in *E. coli* monitoring when alternative disinfection methods are used. This condition is required by Sewerage Collection and Treatment Regulations, 9 VAC 25-790, bacteria standards. These requirements ensure proper operation of chlorination equipment to maintain adequate disinfection.

B. **Schedule of Compliance (Part I.C)**

Rationale: In accordance with 9 VAC 25-31-250 A3, a schedule of compliance has been added to allow the permittee time to meet ammonia as nitrogen limitations.

C. **Compliance Reporting under Part I.A and Part I.B (Part I.D.1)**

Rationale: In accordance with VPDES Permit Regulation, 9 VAC 25-31-190 J4 and 220 I, DEQ is authorized to establish monitoring methods and procedures to compile and analyze data on water quality, as per 40 CFR Part 130, Water Quality Planning and Management, Subpart 130.4. This condition is necessary when pollutants are monitored by the permittee and a maximum level of quantification and/or specific analytical method is required in order to assess compliance with a permit limit or to compare effluent

quality with a numeric criterion. This condition also establishes protocols for calculation of reported values.

D. 95% Capacity Reopener (Part I.D.2)

Rationale: This condition requires that the permittee address problems resulting from high influent flows, in a timely fashion, to avoid non-compliance and water quality problems from plant overloading. This requirement is contained in 9 VAC 25-31-200 B4 of the VPDES Permit Regulations.

E. CTC, CTO Requirement (Part I.D.3)

Rationale: This condition is required by Code of Virginia § 62.1-44.19 and the Sewage Collection and Treatment Regulations, 9 VAC 25-790.

F. Operation and Maintenance Manual Requirement (Part I.D.4)

Rationale: Submittal of the Manual to DEQ for approval is required by the Code of Virginia Section § 62.1-44.19; the Sewage Collection and Treatment Regulations, 9 VAC 25-790; and the VPDES Permit Regulation, 9 VAC 25-31-190 E, to provide an opportunity for review of current and proposed operations of the facility. Within 90 days from the effective date of the permit, the permittee is required to either submit an updated Manual or notify DEQ that the Manual remains accurate.

G. Licensed Operator Requirement (Part I.D.5)

Rationale: The VPDES Permit Regulation, 9 VAC 25-31-200 C and the Code of Virginia §54.1-2300 et seq., Rules and Regulations for Waterworks and Wastewater Works Operators (18 VAC 160-20-10 et seq.), require licensure of operators. A Class IV operator is required for this facility.

H. Reliability Class (Part I.D.6)

Rationale: Reliability class designations are required by Sewage Collection and Treatment Regulations, 9 VAC 25-790 for all municipal and domestic sewage facilities. Facilities are required to achieve a certain level of reliability to protect water quality and public health in the event of component or system failure. A Reliability Class I has been assigned to this facility.

I. Financial Assurance and Disclosure to Purchasers (Part I.D.7)

Rationale: Submittal of a financial assurance closure plan with annual cost adjustments is required by Code of Virginia §62.1-44.18:3 and the Board's Financial Assurance Regulation, 9 VAC 25-650-10 et seq.

J. Sludge Reopener (Part I.D.8)

Rationale: This condition is required by VPDES Permit Regulation, 9 VAC 25-31-220 C for all permits issued to treatment works treating domestic sewage to allow incorporation of any applicable standard for sewage sludge use or disposal promulgated under Section 405(d) of the Clean Water Act.

K. Sludge Use and Disposal (Part I.D.9)

Rationale: VPDES Permit Regulation, 9 VAC 25-31-100 P; 220 B2; and 420 and 720, and 40 CFR Part 503 require all treatment works treating domestic sewage to submit information on sludge use and disposal practices and to meet specified standards for sludge use and disposal. Technical requirements may be derived from the VPA Permit Regulation, 9 VAC 5-32-10 et seq. This special condition, in accordance with Guidance Memorandum No. 97-004, clarifies that the Sludge Management Plan approved with the reissuance of this permit is an enforceable condition of the permit.

L. Effluent Monitoring Frequencies (Part I.D.10)

Rationale: Permittees are granted a reduction in monitoring frequency based on a history of permit compliance. To remain eligible for the reduction, the permittee should not have violations related to the effluent limits for which reduced frequencies were granted. If the permittee fails to maintain the previous level of performance, the baseline monitoring frequencies should be reinstated for those parameters that were previously granted a monitoring frequency reduction. These reductions are in conformance with the VPDES Permit Manual and EPA's proposed "Interim Guidance for Performance-Based Reduction of NPDES Permit Monitoring Frequencies" (EPA 833-B-96-001) published in April 1996.

M. Minimum Freeboard (Part I.D.11)

Rationale: In accordance with 9 VAC 25-32-30A to minimize the potential to discharge untreated wastewater to the ground water or surface water, all waste storage facilities shall maintain one foot of freeboard at all times.

N. Ground Water Monitoring Plan (Part I.D.12)

Rationale: State Water Control Law Section 62.1-44.21 authorizes the Board to request information needed to determine the discharge's impact on State waters. Ground water monitoring for parameters of concern will indicate whether the system integrity is being maintained and will determine if activities at the site are resulting in violations to the State Water Control Board's Ground Water Standards. A statistical evaluation report shall be submitted to DEQ followed by a Corrective Action Plan if contamination is identified.

O. **Total Maximum Daily Load (TMDL) Reopener (Part I.D.13)**

Rationale: Section 303(d) of the Clean Water Act requires that Total Maximum Daily Loads (TMDLs) be developed for streams listed as impaired. This special condition is to allow the permit to be reopened if necessary to bring it into compliance with any applicable TMDL approved for the receiving stream. The reopener recognizes that, according to Section 402(o)(1) of the Clean Water Act, limits and/or conditions may be either more or less stringent than those contained in this permit. Specifically, they can be relaxed if they are the result of a TMDL, basin plan, or other wasteload allocation prepared under Section 303 of the Act.

P. **Conditions Applicable to All VPDES Permits (Part II)**

Rationale: VPDES Permit Regulation, 9 VAC 25-31-190 requires all VPDES permits to contain or specifically cite the conditions listed.

21. **Changes to the Permit:**

A. **Special condition deleted from the permit are as follows:**

1. The Materials Handling and Storage Special Condition (old Part I.C.9) has been deleted because there are no industrial discharges from this facility.
2. Indirect Dischargers Special Condition (old Part I.C.11) has been removed from the permit because the facility does not receive wastewater from any sources not owned by the permittee.

B. **Special conditions that have been modified from the previous permit are listed below: (The referenced permit sections are for the new permit.)**

1. The Compliance Reporting under Part I.A and Part I.B Special Condition (Part I.D.1) has been revised to include information about significant figures.
2. In accordance with the VPDES Permit Manual, the CTC, CTO Requirement Special Condition (Part I.D.3) has been revised to reflect differences in funding of projects.
3. The Operations and Maintenance Manual Special Condition (Part I.D.4) has been revised in accordance with the VPDES Permit Manual.
4. The Ground Water Monitoring Plan Special Condition (Part I.D.12) frequency has been modified. A statistical evaluation has also been required.

C. **New special conditions added to the permit are listed below:**

1. A Schedule of Compliance (Part I.C) has been added to allow the permittee time to meet the ammonia limitations.
2. A Total Maximum Daily Load (TMDL) Reopener Special Condition has been added as Part I.D.13 to allow opening of the permit if necessary to comply with any applicable TMDL for the receiving stream.

D. **Permit Limits and Monitoring Requirements:** See Table III on page 16 for details on changes to the effluent limits and monitoring requirements.

22. **Variances/Alternate Limits or Conditions:** No variances or alternate limits or conditions are included in this permit. A waiver was requested to allow that grab samples for TSS and BOD₅ required by the permit, be recorded on the application in lieu of composite samples. This waiver has been granted.
23. **Regulation of Treatment Works Users:** VPDES Permit Regulation 9 VAC 25-31-280 B9 requires that every permit issued to a treatment works owned by a person other than a state or municipality provide an explanation of the Board's decision on the regulation of users. There are no industrial users contributing to the treatment works.
24. **Public Notice Information required by 9 VAC 25-31-280 B:**

All pertinent information is on file and may be inspected, and arrangements made for copying by contacting Becky L. France at:

Virginia DEQ, Blue Ridge Regional Office
3019 Peters Creek Road
Roanoke, VA 24019
540-562-6700
becky.france.deq.virginia.gov

Persons may comment in writing or by e-mail to the DEQ on the proposed permit action and may request a public hearing during the comment period. Comments shall include the name, address, and telephone number of the writer and of all persons represented by the commenter/requester, and shall contain a complete, concise statement of the factual basis for the comments. Only those comments received within this period will be considered. The DEQ may decide to hold a public hearing, including another comment period, if public response is significant and there are substantial, disputed issues relevant to the permit. Requests for public hearings shall state 1) the reason why a hearing is requested; 2) a brief informal statement regarding the nature and extent of the interest of the requester or of those represented by the requester, including how and to what extent such interest would be directly and adversely affected by the permit; and 3) specific references, where possible, to terms and conditions of the permit with suggested revisions. Following the comment period, the Board will make a determination regarding the proposed

permit action. This determination will become effective, unless the DEQ grants a public hearing. Due notice of any public hearing will be given. The public may review the draft permit and application at the Blue Ridge Regional Office in Roanoke by appointment. A copy of the public notice is found in **Attachment K**.

25. **303(d) Listed Segments (TMDL):** This facility discharges directly to Opossum Creek. The stream segment receiving the effluent is listed as impaired for *E. coli* on the current 303(d) list. EPA approved the *E. coli* TMDL on December 7, 2009 and approved an amendment on December 3, 2009 for this segment. The TMDL report contains a wasteload allocation (WLA) for this discharge of 6.10E+10 cfu/year for *E. coli*. The TMDL report indicates that an *E. coli* limit of 126 cfu/100 mL will ensure compliance with the bacteria TMDL for the discharge. The permit has a limit of 126 cfu/100 mL for *E. coli* that is in compliance with the TMDL.
26. **Additional Comments:**
- A. **Reduced Effluent Monitoring:** In accordance with Guidance Memorandum 98-2005, all permit applications received after May 4, 1998, are considered for reduction in effluent monitoring frequency. Only facilities having exemplary operations that consistently meet permit requirements may qualify for reduced monitoring. To qualify for consideration of reduced monitoring requirements, the facility should not have been issued any Warning Letters, Notices of Unsatisfactory Laboratory Compliance, Letter of Noncompliance (LON) or Notices of Violation (NOV), or be under any Consent Orders, Consent Decrees, Executive Compliance Agreements, or related enforcement documents during the past three years.
- Bennie's Mobile Home Park STP was issued a Warning Letter (No. W2009-06-L-1008) for failure to submit a complete Operations and Maintenance (O&M) Manual. This Warning Letter was rescinded because it was sent in error. The O&M Manual was submitted on February 14, 2006 and approved on March 5, 2009. No other Warning Letters or enforcement documents were found in the DEQ correspondence file.
- Based upon a review of the files, it is believed that this facility has an exemplary operation and shall therefore qualify for a reduced monitoring evaluation of the data submitted on the DMRs. An evaluation of the DMR data is included in **Attachment H**.
- B. **Previous Board Action:** None
- C. **Staff Comments:** The discharge is not specifically addressed in any planning document, but will be included, if applicable, when the plan is updated.

Since this facility is a privately owned domestic sewage treatment facility with a design capacity of less than 40,000 gpd, the permittee is required to demonstrate financial capability. In accordance with the Code of Virginia §62.1-44.18:3 and the Board's Financial Assurance Regulation, 9 VAC 25-650-10 et seq., this facility's closure plan was

approved on March 2, 2005. Annual cost estimate adjustments to the closure plan are required and this requirement is included in Part I.C.7 of the permit.

D. **Public Comments:** (to be determined)

E. **Tables:**

Table I	Discharge Description (Page 2)
Table II	Basis for Monitoring Requirements (Pages 14-15)
Table III	Permit Processing Change Sheet (Page 16)

F. **Attachments:**

- A. Flow Frequency Memorandum
- B. Wastewater Schematic
- C. Site Inspection Report
- D. USGS Topographic Map
- E. Ambient Water Quality Information
 - STORET Data (Station 2-OPP000.16)
 - Final 2008 305(b)/303(d) Water Quality Assessment Integrated Report (Excerpt)
 - Bacteria Total Maximum Daily Load Development for the James River Basin Report (Excerpt)
 - EPA Approval Letters of Bacteria TMDL for James River Basin
- F. Ground Water
 - Ground Water Data Evaluation Memorandum
 - Ground Water Monitoring Plan (Excerpt)
- G. Wasteload and Limit Calculations
 - Mixing Zone Calculations (MIXER 2.1)
 - Effluent Data
 - Antidegradation Wasteload Allocation Spreadsheet
 - STATS Program Results (ammonia, TRC)
- H. Justification for Reduced Monitoring Frequency Memorandum
- I. Regional Water Quality Model Output (Version 4.10)
- J. Financial Assurance
 - State Commerce Commission Certificate
 - Closure Plan
 - Financial Assurance Annual Cost Adjustment Approval Letter
- K. Public Notice
- L. EPA Review Checksheet

Table II-1
BASIS FOR LIMITATIONS – MUNICIPAL

Effective Dates - From: Effective Date
To: Expiration Date

OUTFALL: 001
DESIGN CAPACITY: 0.035 MGD

() Interim Limitations
(x) Final Limitations

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITS			MONITORING REQUIREMENTS		
		Monthly Average	Weekly Average	Minimum	Maximum	Frequency	Sample Type
Flow (MGD)	NA	NL	NA	NA	NL	1/Day	Estimate
pH (Standard Units)	1	NA	NA	6.0	9.0	1/Day	Grab
BOD ₅	1	30 mg/L 4000 g/d	45 mg/L 6000 g/d	NA	NA	1/ 6 Months	Grab
Total Suspended Solids	1	30 mg/L 4000 g/d	45 mg/L 6000 g/d	NA	NA	1/ 6 Months	Grab
Total Residual Chlorine	2	0.019 mg/L	0.023 mg/L	NA	NA	1/Day	Grab
Dissolved Oxygen	2,4	NA	NA	6.0 mg/L	NA	1/Day	Grab
Ammonia as Nitrogen (June - December)	2	12 mg/L	12 mg/L	NA	NA	1/Month	Grab
<i>E. coli</i>	2,5	126 cfu/100 mL	NA	NA	NA	1/Week	Grab (between 10 AM and 4 PM)

1/ 6 months = once per six months

NA = Not Applicable
NL = No Limitations; monitoring only

The basis for the limitations codes are:

1. Federal Technology-Based Secondary Treatment Regulation (40 CFR Part 133)
2. Water Quality Criteria
3. Best Professional Judgment
4. Regional Water Quality Model
5. Bacteria TMDL Wasteload Allocation (James River)

Table II-2
BASIS FOR LIMITATIONS – MUNICIPAL

(X) Interim Limitations
() Final Limitations

Effective Dates - From: Effective Date
To: Expiration Date

OUTFALL: 001
DESIGN CAPACITY: 0.035 MGD

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITS				MONITORING REQUIREMENTS	
		Monthly Average	Weekly Average	Minimum	Maximum	Frequency	Sample Type
Flow (MGD)	NA	NL	NA	NA	NL	1/Day	Estimate
pH (Standard Units)	1	NA	NA	6.0	9.0	1/Day	Grab
BOD ₅	1	30 mg/L 4000 g/d	45 mg/L 6000 g/d	NA	NA	1/6 Months	Grab
Total Suspended Solids	1	30 mg/L 4000 g/d	45 mg/L 6000 g/d	NA	NA	1/6 Months	Grab
Total Residual Chlorine	2	0.019 mg/L	0.023 mg/L	NA	NA	1/Day	Grab
Dissolved Oxygen	2,4	NA	NA	6.0 mg/L	NA	1/Day	Grab
<i>E. coli</i>	2	126 cfu/100 mL	NA	NA	NA	1/Week	Grab (between 10 AM and 4 PM)

NA = Not Applicable
NL = No Limitations; monitoring only
1/6 months = once per six months

The basis for the limitations codes are:

1. Federal Technology-Based Secondary Treatment Regulation (40 CFR Part 133)
2. Water Quality Criteria
3. Best Professional Judgment
4. Regional Water Quality Model

Table III
PERMIT PROCESSING CHANGE SHEET

LIMITS AND MONITORING SCHEDULE:

Outfall No.	Parameter Changed	Monitoring Requirement Changed		Effluent Limits Changed		Reason for Change	Date
		From	To	From	To		
001	Total Suspended Solids	1/3 Months	1/6 Months			Monitoring data supports a reduced monitoring frequency of 1/6 months.	4/2/10
001	BOD ₅	1/3 Months	1/6 Months			Monitoring data supports a reduced monitoring frequency of 1/6 months.	4/2/10
001	Total Residual Chlorine			0.080 mg/L monthly average; 0.100 mg/L weekly average	0.019 mg/L monthly average; 0.023 mg/L weekly average	STATS program indicated the need for more stringent limitations.	4/2/10
001	Ammonia as Nitrogen (June - Dec.) final limit	NA	1/Month	NA	12 mg/L monthly average; 12 mg/L weekly average	STATS program indicated the need for ammonia limitations.	4/2/10
001	<i>E. coli</i>	NA	1/Week	NA	126 cfu/100 mL	Monitoring and a limit added because the facility discharges into a stream segment impaired for bacteria, and a Total Maximum Daily Load (TMDL) wasteload allocation has been assigned to this discharge.	4/2/10

Attachment A

Flow Frequency Memorandum

MEMORANDUM

DEPARTMENT OF ENVIRONMENTAL QUALITY

South Central Regional Office - Water Planning

7705 Timberlake Road Lynchburg, VA 24502 434/582-5120

SUBJECT: Flow Frequency Determination
Bennie's Mobile Home Park STP - #VA0061042

TO: Becky France

FROM: Amanda Gray *ag*

DATE: November 16, 2009

COPIES: File

This memo supersedes my January 6, 2005 memo to Kevin Crider concerning the subject VPDES permit. Bennie's Mobile Home Park STP discharges to Opossum Creek near the railroad bridge south of Babcock, VA. Stream flow frequencies are required at this site by the permit writer for the purpose of calculating effluent limitations for the VPDES permit.

The USGS conducted several flow measurements on Beaver Creek from 1981 to 1984. The measurements were made at the Route 660 bridge near Babcock, VA. The measurements made correlated very well with the same day daily mean values from three continuous record gages; one on the Big Otter River near Evington, VA (#02061500), one on the Buffalo River near Tye River, VA (#02027800) and one on Falling River near Naruna, VA (#02025900). The measurements and daily mean values were plotted on a logarithmic graph and a best-fit line was drawn through the data points. The required flow frequencies from the reference gages were used in a regression analysis to determine the flow frequencies at the measurement site. An average of the three resulting values were assigned to the measurement site.

The flow frequencies at the discharge point were determined by using values at the measurement site and adjusting them by proportional drainage areas. The data for the reference gage, the measurement site and the discharge point are presented below:

Big Otter River near Evington, Va. #02061500:

Drainage Area: 320 mi²

1Q10 = 18 cfs	High Flow 1Q10 = 85 cfs
7Q10 = 21 cfs	High Flow 7Q10 = 98 cfs
30Q5 = 48 cfs	High Flow 30Q10 = 131 cfs
30Q10 = 31 cfs	Harmonic Mean = 132 cfs

Buffalo River near Tye River, Va. #02027800:

Drainage Area: 147 mi²

1Q10 = 8.9 cfs	High Flow 1Q10 = 29 cfs
7Q10 = 9.7 cfs	High Flow 7Q10 = 34 cfs
30Q5 = 21 cfs	High Flow 30Q10 = 50 cfs
30Q10 = 15 cfs	Harmonic Mean = 71 cfs

Falling River near Naruna, Va. #02064000:

Drainage Area: 173 mi²

1Q10 = 10 cfs	High Flow 1Q10 = 36 cfs
7Q10 = 13 cfs	High Flow 7Q10 = 41 cfs
30Q5 = 25 cfs	High Flow 30Q10 = 56 cfs
30Q10 = 18 cfs	Harmonic Mean = 69 cfs

Beaver Creek at measurement site #02025900:

Drainage Area: 24.0 mi²

1Q10 = 1.616 cfs	High Flow 1Q10 = 5.255 cfs
7Q10 = 1.881 cfs	High Flow 7Q10 = 5.959 cfs
30Q5 = 3.612 cfs	High Flow 30Q10 = 7.963 cfs
30Q10 = 2.617 cfs	Harmonic Mean = 9.434 cfs

Opossum Creek at discharge point:

Drainage Area: 5.99 mi²

1Q10 = 0.403 cfs (0.26 MGD)	High Flow 1Q10 = 1.311 cfs (0.847 MGD)
7Q10 = 0.469 cfs (0.303 MGD)	High Flow 7Q10 = 1.487 cfs (0.961 MGD)
30Q5 = 0.901 cfs (0.582 MGD)	High Flow 30Q10 = 1.987 cfs (1.284 MGD)
30Q10 = 0.653 cfs (0.422 MGD)	Harmonic Mean = 2.355 cfs (1.522 MGD)

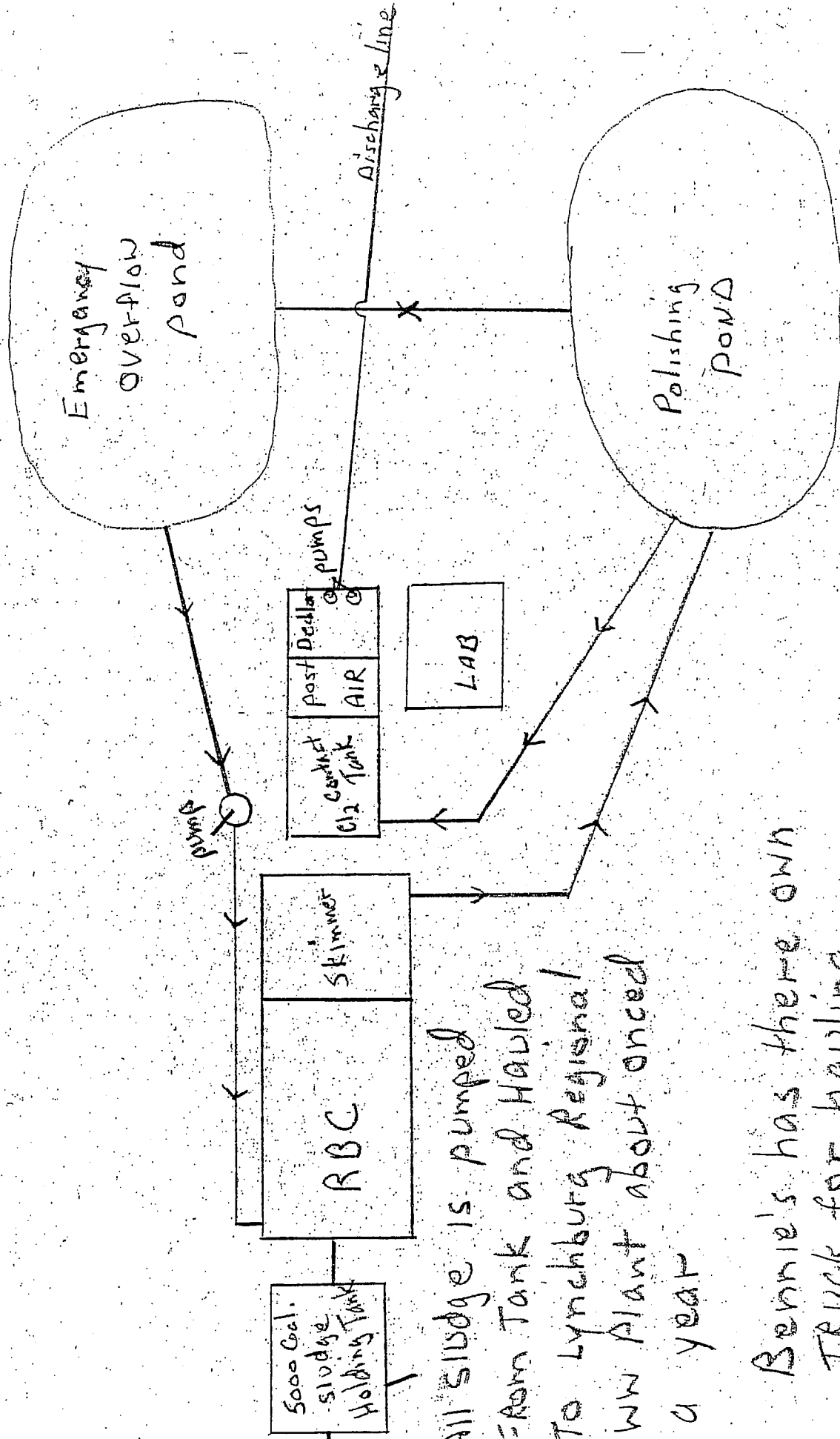
The high flow months are January through May. This analysis assumes there are no significant discharges, withdrawals or springs influencing the flow.

If there are any questions concerning this analysis, please let me know.

Attachment B

Wastewater Schematic

EACH MOBILE HOME HAS ITS OWN 1000 GAL TANK
THAT IS PUMPED ABOUT EVERY 3 YEARS



All Sludge is pumped
From Tank and Hauled
To Lynchburg Regional
WW Plant about once
a year

Bennie's has there own
TRUCK for hauling

Attachment C

Site Inspection Report

MEMORANDUM

DEPARTMENT OF ENVIRONMENTAL QUALITY
Blue Ridge Regional Office

3019 Peters Creek Road

Roanoke, VA 24019

SUBJECT: Site Inspection Report for Bennie's Mobile Home Park STP
Reissuance of VPDES Permit No. VA0061042

TO: Permit File

FROM: Becky L. France, Environmental Engineer Senior *BLF*

DATE: October 15, 2009

On September 30, 2009, a site inspection was conducted of the wastewater works at Bennie's Mobile Home Park STP. Mr. Byron Bunnell, General Manager, was present at the inspection. The facility is located on Route 501 about 2 miles south of Lynchburg. The treatment system services a mobile home park and two apartment buildings for a total of about 50 connections. Each mobile home has its own 1,000 gallon septic tank which discharges to the wastewater treatment plant. Septage from the septic tanks is pumped about once every three years.

The 35,000 gpd wastewater treatment system consists of a rotating biological contactor (RBC), secondary clarifier, polishing pond, gas chlorination, post aeration, and dechlorination. Sludge generated from the RBC is pumped to a 5,000-gallon holding tank which is pumped and hauled to a wastewater treatment plant once per year. There is also an emergency overflow pond that can be used during maintenance or overflows. Currently, the facility is discharging well below the design capacity. The polishing pond was covered with duckweed. According to Mr. Bunnell, solids were removed from the pond a couple of years ago.

The discharge from the treatment works is piped about an eighth of a mile to the discharge point into Opossum Creek. Flow is estimated from a discharge weir after chlorination. At the time of the site visit, there was a discharge from the outfall. There was no evidence of debris at the discharge point.

Attachment D

USGS Topographic Map

DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

79°07'30"
37°22'30"

291 3 MI.

668000m E

1469

5'

Location
Map

Bennie's Rentals
STP

Wells

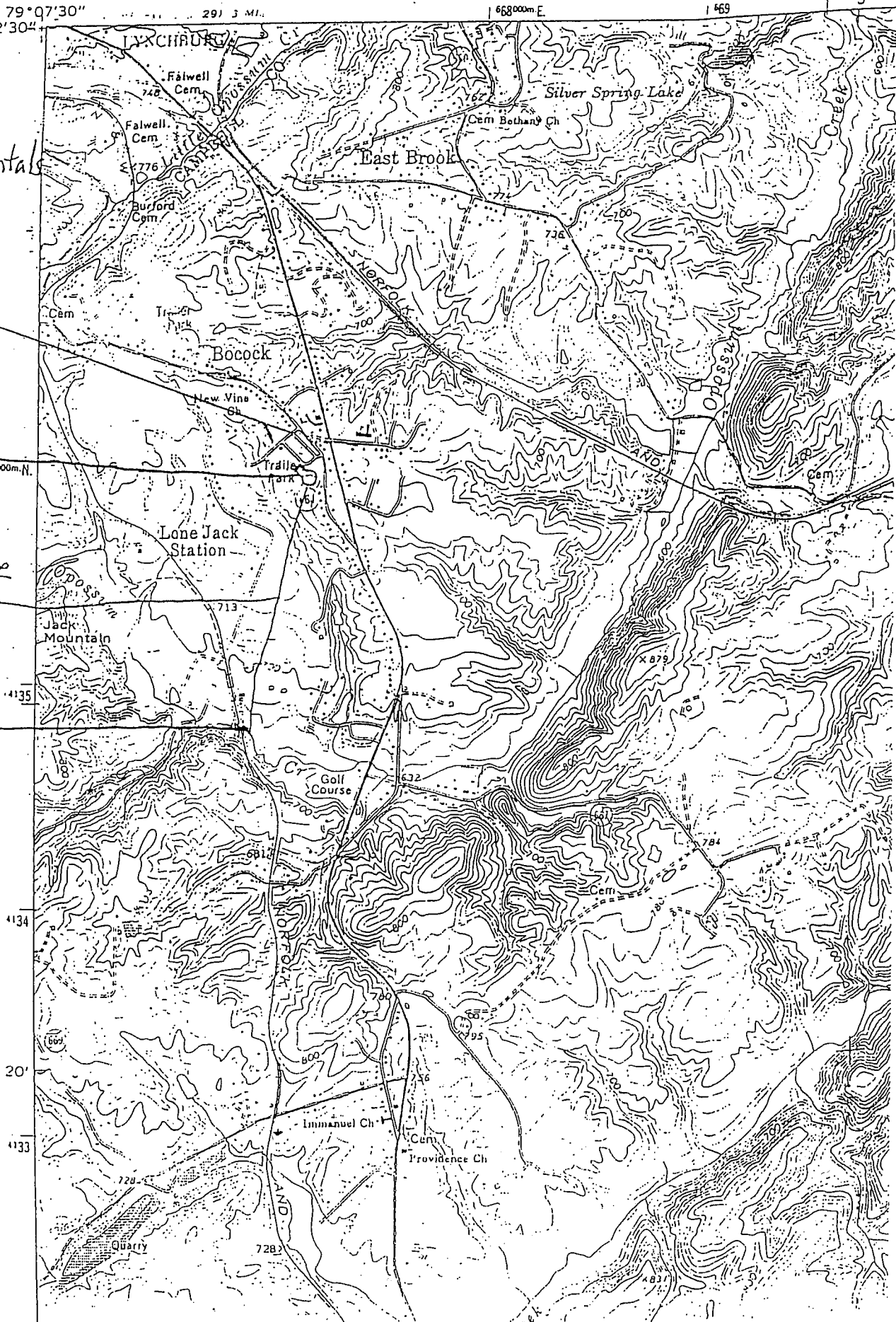
Boundary
Line of STP

Pumping
Line

Discharge to
Opssum Creek

Scale:

1" = 24000'



Attachment E

Ambient Water Quality Information

- **STORET Data (Station 2-OPP000.16)**
- **Final 2008 303(b)/303(d) Water Quality Assessment Integrated Report (Excerpt)**
- **Bacteria Total Maximum Daily Load Development for the James River Basin Report (Excerpt)**
- **EPA Approval Letters for Bacteria TMDL for the James River Basin**

Station ID 2-OPP000.16 (Route 460 bridge - Campbell County)
Watershed Code VAC-H05R

Collection Date Time	Temperature (Celsius)	pH (S.U.)
3/1/1994 14:00	4.5	8.3
6/1/1994 13:00	19.2	8.3
7/10/2001 14:35	23.67	7.36
9/18/2001 12:40	16.1	7.63
11/20/2001 12:25	9.41	7.47
1/22/2002 11:50	2.15	7.32
3/11/2002 11:55	5.74	7.5
5/23/2002 10:10	11.61	7.5
7/1/2002 11:20	23.34	7.35
9/16/2002 12:00	21.45	7.38
11/12/2002 12:30	12.94	6.97
12/19/2002 16:40	6.2	7.21
1/28/2003 11:35	0.38	7.58
4/9/2003 12:20	8.56	7.09
6/26/2003 12:20	20.97	7.41
1/18/2007 14:50	4.3	7.4
2/8/2007 13:54	1.2	7.2
2/12/2007 15:15	3.3	6.6
3/19/2007 14:30	8.6	7.3
4/23/2007 13:50	17.7	7.7
4/24/2007 15:28	18.4	8
5/29/2007 16:05	22.3	7.7
6/19/2007 14:38	22.8	7.9
6/25/2007 14:36	21.1	7.6
7/23/2007 14:57	20.6	7.6
8/27/2007 15:20	23.8	7.6
8/30/2007 14:25	23.6	7.6
9/17/2007 13:50	15	7.6
10/15/2007 10:25	11.2	7.9
10/22/2007 12:30	13.5	7.6
11/26/2007 12:55	8.3	7.5
12/11/2007 12:25	10.2	7.9
12/17/2007 13:20	3.8	7.8
2/12/2008 13:55	2.6	7.5
4/15/2008 14:50	14.8	7.8
6/24/2008 14:52	21.6	7.7
8/14/2008 13:31	22.5	7.5
10/23/2008 15:10	8.7	7.7
12/11/2008 14:20	8	7.5

90th Percentile Temperature	23	°C	
90th Percentile Temperature	18	°C	(January - May) (high flow)
90th Percentile pH	7.9	S.U.	
10th Percentile pH	7.2	S.U.	

Station ID 2-OPP000.16 (Route 460 bridge - Campbell County)
Watershed Code VAC-H05R

Hardness,
Total (mg/L
AS CaCO_3)

Collection Date Time

4/9/2003 12:20	13.6
3/11/2002 11:55	27.8
3/1/1994 14:00	30
1/22/2002 11:50	31
3/4/1991 13:30	32
3/1/1993 13:30	32
7/10/2001 14:35	33
9/18/2001 12:40	33.3
6/26/2003 12:20	35.7
6/12/1989 14:00	36
3/5/1990 11:00	36
11/12/2002 12:30	38
3/2/1992 13:30	40
6/1/1993 13:30	40
6/7/1990 11:30	41
9/7/1989 11:30	42
12/11/1989 10:00	42
12/5/1990 10:00	44
12/5/1991 13:30	44
6/3/1992 14:00	44
1/28/2003 11:35	45.3
9/1/1993 13:30	46
12/7/1988 11:00	50
9/5/1988 12:00	54
5/23/2002 10:10	56.1
9/10/1992 14:00	58
11/20/2001 12:25	61.1
9/25/1991 14:00	66
12/1/1993 13:00	66
9/12/1990 12:00	67
7/1/2002 11:20	68.8
9/16/2002 12:00	86.6
12/8/1992 13:30	93
Mean	46

*Appendix A - List of Impaired (Category 5) Waters in 2008**

James River Basin

Cause Group Code **H05R-04-BAC**

Opossum Creek

Location: Opossum Creek from the Route 660 crossing to its mouth on the James River.

City / County: Campbell Co.

Use(s): Recreation

Cause(s) /

VA Category: Fecal Coliform / 5A

Station ID: 2-OPP000.16 3/13 violation rate for fecal coliform

Opossum Creek

Recreation

Estuary
(Sq. Miles)

Reservoir
(Acres)

River
(Miles)

Fecal Coliform - Total Impaired Size by Water Type:

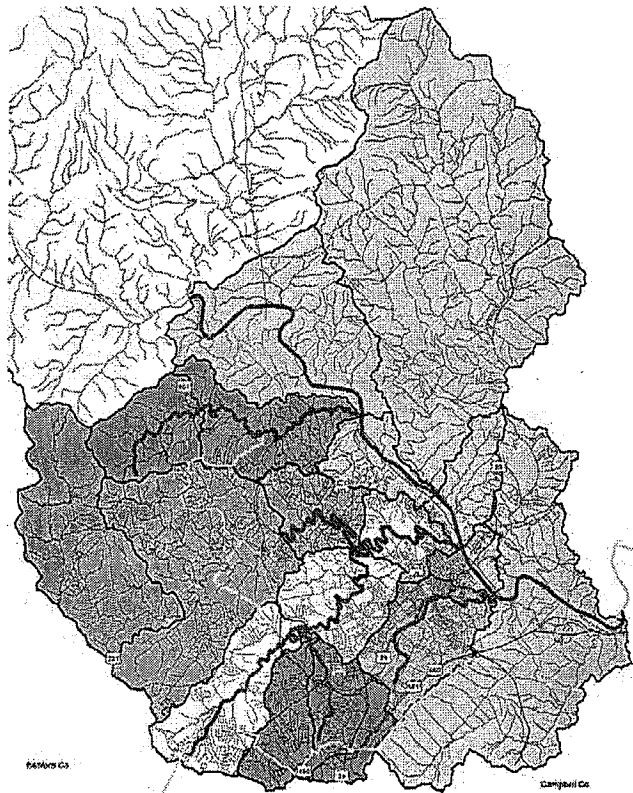
3.04

Sources:

Source Unknown

Recreation	Escherichia coli	5A	10.54	2006	2018
H03R-07-BAC	Tomahawk Creek				
Recreation	Escherichia coli	5A	5.89	2006	2018
H03R-08-BAC	Williams Run				
Recreation	Escherichia coli	5A	6.37	2006	2018
H03R-09-BAC	Dreaming Creek				
Recreation	Escherichia coli	5A	4.69	2008	2020
H03R-10-BAC	Burton Creek, Unnamed Tributary				
Recreation	Escherichia coli	5A	3.43	2008	2020
H04R-01-BAC	Graham Creek				
Recreation	Fecal Coliform	5A	5.17	2002	2014
H04R-02-BAC	Harris Creek				
Recreation	Escherichia coli	5A	7.27	2008	2020
H05R-03-BAC	Beaver Creek				
Recreation	Fecal Coliform	5A	8.50	2004	2016
H05R-04-BAC	Opossum Creek				
Recreation	Fecal Coliform	5A	3.04	2004	2016
H05R-05-BAC	Stonewall Creek				
Recreation	Escherichia coli	5A	9.04	2008	2020
H06R-01-BAC	Wreck Island Creek				
Recreation	Escherichia coli	5A	9.75	2008	2014

Bacteria Total Maximum Daily Load Development for the James River Basin



Submitted by:
Virginia Department of Environmental Quality

Prepared by:
Engineering Concepts, Inc.

Submitted: August 2007

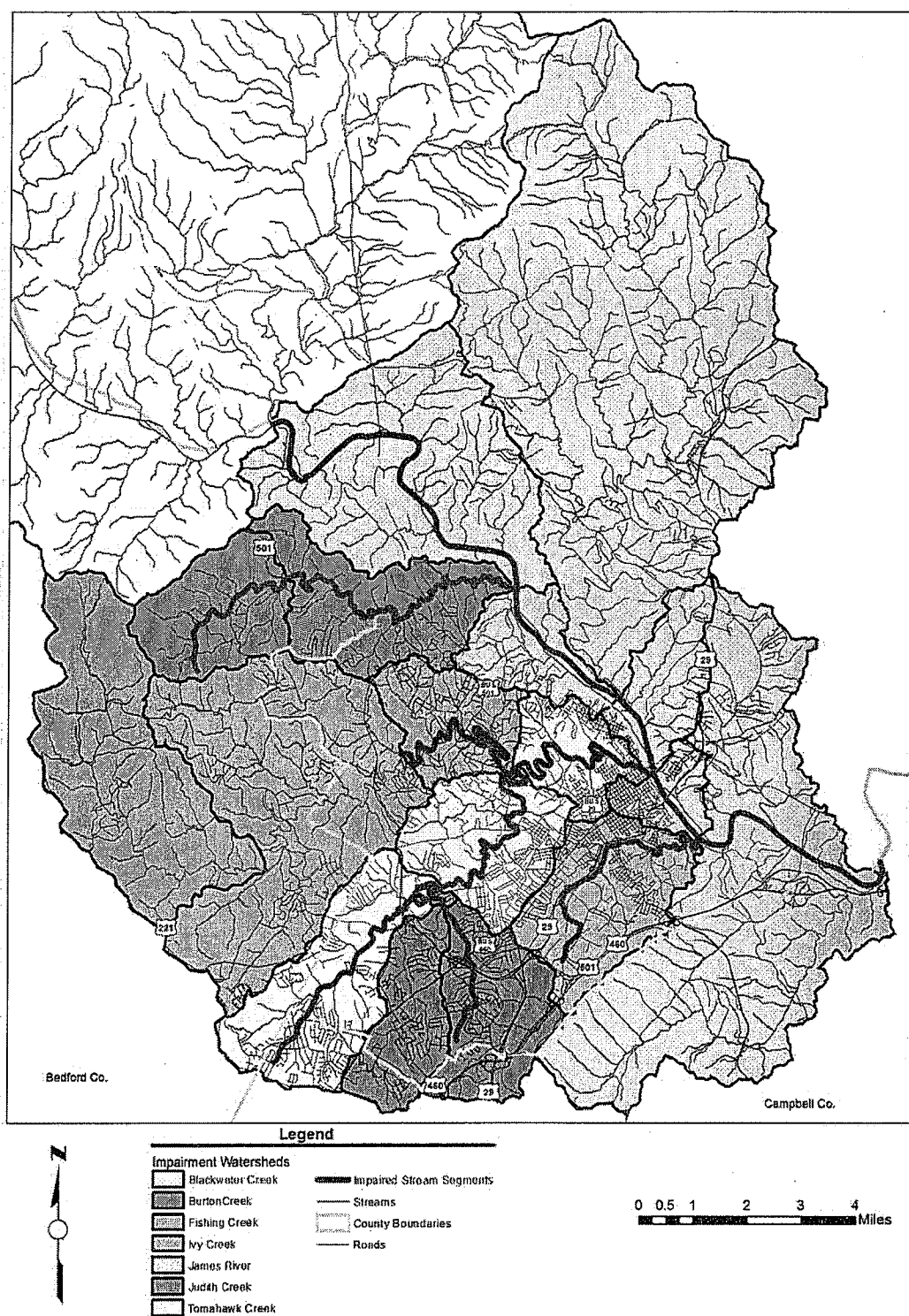


Figure 1.1. Location James River, Ivy Creek, Fishing Creek, Blackwater Creek, Tomahawk Creek, Blackwater Creek, Fishing Creek and James River watersheds.

Table 3.1. Sources of bacteria in the impaired watersheds.

Source Category	Source / Animal Type	Applied To
Human and Pets	Permitted Discharges	Stream Reach
	Sanitary Sewer	Land
	Straight Pipes	Stream Reach
	Failing Septic Systems	Land
	Biosolids Applications	Land
	Dogs / Cats	Land
Agricultural	Dairy Cattle	Land, Stream Reach
	Beef Cattle	Land, Stream Reach
	Horses	Land
	Turkey	Land
	Chicken	Land
	Other Livestock	Land
Wildlife	Deer	Land, Stream Reach
	Raccoon	Land, Stream Reach
	Muskrats	Land, Stream Reach
	Beavers	Land, Stream Reach
	Turkeys	Land, Stream Reach
	Geese	Land, Stream Reach
	Ducks	Land, Stream Reach

3.1 Permitted Discharges

Permitted point sources of fecal coliform bacteria in the James River (VAC-H03R-04), Ivy Creek (VAC-H03R-03), Fishing Creek (VAC-H03R-02), and Blackwater Creek (VAC-H03R-01) Tomahawk Creek (VAC-H03R-07), Burton Creek (VAC-H03R-05), and Judith Creek (VAC-H03R-06) watersheds include all municipal and industrial plants that treat human waste (individual permits), as well as private residences that fall under general permits (less than or equal to 1,000 gallons per day). Virginia issues Virginia Pollutant Discharge Elimination System (VPDES) permits for point sources of pollution. Point sources with an individual or general permit were required to maintain a fecal coliform concentration of 200 cfu/100 mL or less (the 'interim standard'), and are required to meet the new *E. coli* standard of 126 cfu/100 mL or less in their effluent on permit renewal. Table 3.2 shows the point sources in the James River (VAC-H03R-04) and Judith Creek (VAC-H03R-06) watersheds. There are no permitted facilities discharging bacteria in the Ivy Creek (VAC-H03R-03), Fishing Creek (VAC-H03R-02), and Blackwater Creek (VAC-H03R-01) Tomahawk Creek (VAC-H03R-07), or Burton Creek (VAC-H03R-05) watersheds.

In allocation scenarios, the entire allowable point source discharge concentration of 200 cfu/100 mL of fecal coliform (the 'interim standard') was used. The ultimate waste load allocation (WLA) was calculated using the *E. coli* limit of 126 cfu/100mL, and *E. coli* loads based on the facility design flow are presented in Table 3.2.

Table 3.2. Active VPDES permitted point sources in the James River watershed.

Impairment	Permit Number	Facility Name	Sub-shed	Design Flow (MGD)	FC Load (cfu/yr)	E. coli Load (cfu/yr)
Judith Creek (VAC-H03R-06)	VA0063657 ¹	Amherst Co Service Auth-Ivanhoe Forest	JR-4	0.0015	4.11E+09	2.59E+09
James River (VAC-H03R-04)	VA0027618 ^{1,4}	US Department of Labor-Rescare Incorporated	JR-4	0.04	4.34E+10	6.94E+10
James River (VAC-H03R-04)	VA0091162 ¹	Boonsboro Country Club	JC-2	0.015	4.14E+10	2.61E+10
James River (VAC-H03R-04)	VA0051888 ²	Lynchburg City Abert Water	JR-2	0.265	0.00E+00	0.00E+00
James River (VAC-H03R-04)	VA0024970 ^{1,3}	Lynchburg City Sewage	JR-7	22	6.08E+13	3.83E+13
James River (VAC-H03R-04)	VA0087114 ²	American Electric Power - Reusens	JR-3	0.177	0.00E+00	0.00E+00
James River (VAC-H03R-04)	VA0002925 ²	Griffin Pipe Products	JR-5	0.04	0.00E+00	0.00E+00
James River (VAC-H03R-04)	VA0082546 ^{1,4}	ACSA Westbriar Subdivision STP	JR-4	0.015		2.61E+10
James River (VAC-H03R-04)	VA0061042 ^{1,4}	Bennies Mobile Home Park STP	JR-7	0.035		6.10E+10

- Notes:
1. These permits include either an explicit bacteria limit or a chlorine residual limit implying the discharge of bacteria and therefore will receive an allocation for their permitted load at the design flow.
 2. These permits do not include a bacteria limit, either explicit or implicit. They will be modeled at the design flow, but no allocation will be made for them.
 3. This permit also authorizes combined sewer overflow (CSO) discharge points.
 4. This permit predated the TMDL development, but was not originally included in WLA. Inclusion of the facility will change the WLA and the LA, but not the final TMDL.

As noted in Table 3.2, VPDES permit # VA0024970 associated with the Lynchburg Waste Water Treatment Plant has associated with it authorization for discharges from combined sewer overflow (CSO) points. Since 1989, the City of Lynchburg has been working toward correcting its CSOs, pursuing an approach of separation. To date, 132 CSOs originally identified in 1989 have been reduced to 35 as of 2006. The bacteria load from these CSOs is precipitation event-dependent, and has been reduced from an estimated value of 9.02×10^{16} in 1989 to an estimated value of 1.07×10^{16} in 2002. The City continues to work toward eliminating these 35 CSOs, but estimates it will require another 30 years to completely eliminate them. Active CSO discharge points are present in James River (VAC-H03R-04), Ivy Creek (VAC-H03R-03), Fishing Creek (VAC-H03R-02), and Blackwater Creek (VAC-H03R-01).

Phase II Municipal Separate Storm Sewer System (MS4) permits were also reviewed. The City of Lynchburg and the Virginia Department of Transportation each have a MS4 permit whose limits are defined by the city boundary. These MS4 permits discharge within the James River (VAC-H03R-04), Ivy Creek (VAC-H03R-03), Fishing Creek (VAC-H03R-02), Blackwater Creek (VAC-H03R-01), Tomahawk Creek (VAC-H03R-07), Burton Creek (VAC-H03R-05), and Judith Creek (VAC-H03R-06) watersheds.



COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

Street address: 629 East Main Street, Richmond, Virginia 23219

Mailing address: P.O. Box 1105, Richmond, Virginia 23218

Fax (804) 698-4500 TDD (804) 698-4021

www.deq.virginia.gov

David K. Paylor
Director

(804) 698-4000
1-800-592-5482

L. Preston Bryant, Jr.
Secretary of Natural Resources

December 3, 2009

Mr. Greg Voigt
US EPA Region III TMDL Coordinator
USEPA REGION 3 – 3WP12
1650 Arch Street
Philadelphia, PA 19103-2029

RE: Total Maximum Daily Load modifications for the wasteload allocation in the bacteria TMDL for James River at Lynchburg, including Amherst, Bedford, and Campbell Counties.

Dear Mr. Voigt,

The purpose of this letter is to submit for EPA approval a modification to the waste load allocation for the bacteria TMDL developed for the James River in Amherst, Bedford, and Campbell Counties, VA. EPA Region III approved the bacteria TMDL addressing a recreational use impairment for the James River on 12/04/2007.

Permit Details

During the permit review process, DEQ observed three preexisting permitted municipal sewage facilities which were overlooked during the development of the original James River – Lynchburg TMDL. Two facilities may be found in segment JR-4 and one in segment JR-7 (all are associated with the VAC-H03R-04 TMDL). The first is Amherst County Service Authority, Westbriar Subdivision (VPDES permit number VA0082546), drains to an unnamed trib to Harris Creek to the James River, and has a design flow of 0.015 MGD. The second is United States Department of Labor – Rescare, Incorporated (VPDES permit number VA0027618), drains to Harris Creek to the James River, and has a design flow of 0.040 MGD. The third facility is Bennie's Mobile Home Park Sewage Treatment Plant (VPDES permit number VA0061042), drains to Opossum Creek tributary to the James River, and has a design flow of 0.035 MGD. The wasteload allocations, WLA's, for these facilities would respectively be 2.61×10^{10} , 6.94×10^{10} , and 6.10×10^{10} cfu/100 ml bacteria per year. The cumulative WLA is 1.57×10^{11} and incorporation of this allocation into the original TMDL WLA and LA do not result in a change to the significant figures. The original TMDL will not change as a consequence; there will be no changes to the reduction scenarios for the watershed.

Updating the WLA table in the James River bacteria TMDL in accordance with this modification will not cause a water quality violation. Virginia's Water Quality Standards for bacteria require that treated effluent discharged into a receiving stream meet the bacteria criteria for the stream. No changes to existing loading to the stream will result from this modification.

Public Comment for VA0082546 and VA0027618 will be concurrent with the permit re-issuance public notice. DEQ submits these proposed modifications of the James River bacteria TMDL to EPA Region III for approval. Following EPA approval, DEQ will issue the revised permits.

The current permit for the ACSA Westbriar Subdivision STP (VA0082546) will expire January 31, 2010. The current permit for US Dept of Labor-Rescare (VA0027618) will expire August 14, 2010.

TMDL Revisions

These changes affect the following table and text.

Text of Executive Summary (pp xxvii-xxviii): Sources of Fecal Coliform

Table 3.2. (p 3-3): Active VPDES permitted point sources in the James River watershed.

Text of Section 5.3 (p5-63): TMDL Allocation Senarios

In accordance with EPA's August 2003 letter to VADEQ, VADEQ hereby requests EPA approval of the proposed modification. If you or your staff has any questions, please contact me at (804) 698-4462.

Sincerely,

A handwritten signature in black ink, appearing to read "Charles H. Martin".

Charles H. Martin
Environmental Program Manager
Watershed Programs

Attachments

Replacement page(s)

cc: Jack Frye, VADCR
Sandra Mueller, VADEQ
Paula Nash, BRRO-L TMDL coordinator
File CO



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

DEC 03 2009

Mr. Charles Martin
Virginia Department of Environmental Quality
P.O. Box 1105
Richmond, VA 23218

Dear Mr. Martin:

The United States Environmental Protection Agency (EPA) has reviewed the Virginia Department of Environmental Quality's (DEQ's) request to amend the bacteria Total Maximum Daily Load (TMDL) and waste load allocations (WLAs) for the James River at Lynchburg, including Amherst, Bedford, and Campbell Counties. As explained in your letter, DEQ has identified three permitted municipal sewage facilities that were not included in the original TMDL approved by EPA on January 4, 2007. DEQ is therefore requesting that the TMDL and WLA be modified to include allocations for these facilities.

The name, permit number, design flow, and proposed WLAs for the three permitted facilities not included in the original TMDL Report are as follows:

Facility Name	VPDES Permit Number	Design Flow (MGD)	<i>E. Coli</i> WLA (cfu/year)
Amherst County Service Authority, Westbriar Subdivision	VA0082546	0.015	2.61×10^{10}
United States Department of Labor -- Rescare, Incorporated	VA0027618	0.040	6.94×10^{10}
Bennie's Mobile Home Park Sewage Treatment Plant	VA0061042	0.035	6.10×10^{10}
Total			1.57×10^{11}

The sum of the proposed *E. coli* WLAs listed above is 1.57×10^{11} cfu/year. The original TMDL had an *E. coli* WLA of 2.75×10^{14} cfu/year and an overall TMDL value of 6.51×10^{14} cfu/year. Modifying the original WLA to include allocations for these permitted facilities results in a change of less than 1% of the total TMDL. The overall WLA and TMDL values remain the same, and there will be no changes to the reduction scenarios for the watershed.





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029
12/4/2007

Dr. Ellen Gilinsky, Director
Division of Water Quality Programs
Virginia Department of Environmental Quality
629 East Main Street
Richmond, VA 23219

Dear Dr. Gilinsky:

The U.S. Environmental Protection Agency (EPA), Region III, is pleased to approve the bacteria Total Maximum Daily Loads (TMDLs) to address the recreation impairment on the James River and six of its tributaries: Ivy Creek, Fishing Creek, Blackwater Creek, Tomahawk Creek, Burton Creek and Judith Creek located in Botetourt, Amherst, Bedford, and Campbell Counties, Virginia, in the James River Basin. The TMDLs were submitted to EPA for review on September 7, 2007. The TMDLs were established and submitted in accordance with Sections 303(d)(1)(c) and (2) of the Clean Water Act to address impairments of water quality as identified in Virginia's Section 303(d) List.

In accordance with Federal regulations at 40 CFR §130.7, a TMDL must comply with the following requirements: (1) be designed to attain and maintain the applicable water quality standards; (2) include a total allowable loading and as appropriate, wasteload allocations (WLAs) for point sources and load allocations for nonpoint sources; (3) consider the impacts of background pollutant contributions; (4) take critical stream conditions into account (the conditions when water quality is most likely to be violated); (5) consider seasonal variations; (6) include a margin of safety (which accounts for uncertainties in the relationship between pollutant loads and instream water quality); and (7) be subject to public participation. The bacteria TMDLs for James River and its six tributaries satisfy each of these requirements. In addition, the TMDLs considered reasonable assurance that the TMDL allocations assigned to nonpoint sources can be reasonably met. A copy of EPA's Decision Rationale for approval of these TMDLs is included with this letter.

As you know, all new or revised National Pollutant Discharge Elimination System permits must be consistent with the TMDL WLA pursuant to 40 CFR §122.44 (d)(1)(vii)(B). Please submit all such permits to EPA for review as per EPA's letter dated October 1, 1998.



If you have further questions, please call me or have your staff contact Ms. Helene Drago at (215) 814-5796.

Sincerely,

John Armstead for

Jon M. Capacasa, Director
Water Protection Division

Enclosure



Attachment F

Ground Water

- **Ground Water Data Evaluation
Memorandum**
- **Ground Water Monitoring Program
Plan (Excerpt)**

MEMORANDUM

DEPARTMENT OF ENVIRONMENTAL QUALITY *Blue Ridge Regional Office*

3019 Peters Creek Road

Roanoke, VA 24019

SUBJECT: Ground Water Monitoring Data Evaluation
VPDES Permit No. VA00061042, Bennie's Mobile Home Park STP *BLJ*
TO: Permit File
FROM: Becky L. France, Environmental Engineer Senior
DATE: April 7, 2010

INTRODUCTION:

Bennie's Mobile Home Park STP has an unlined polishing pond. On September 25, 2006, a Ground Water Monitoring Plan was approved for this facility. There is one upgradient well and three downgradient wells. Ground water monitoring has been collected from April 2007 through March 2010. The ground water data consists of pH, total dissolved solids, conductivity, total organic carbon (TOC), chloride, *E. coli*, nitrate, and ammonia. The attached table includes a compilation of the ground water data collected during the permit term. The table below summarizes the data ranges for each of the wells, and the number of excursions from the ground water standards is listed in parenthesis.

Well ID	pH S.U.	Sp. Conductivity umho/cm	Nitrate mg/L	Chloride mg/L	TOC mg/L	Ammonia mg/L	TDS mg/L	<i>E. coli</i> #/100 mL
Ground Water Standard	5.5-8.5	--	5	25	10	0.025	250	--
MW-1 (upgradient)	4.17-5.41 (9)	12.5-27.2	<0.10-0.245 (0)	1-6.03 (0)	<0.10- 1.49 (0)	0.10-0.48 (1)	5-120 (0)	<2-1
MW-2 (downgradient)	4.60-5.92 (3)	15.1-210	<0.10-0.15 (0)	2.17-31 (7)	<1.0-2.62 (0)	<0.20-0.36 (1)	28-204 (0)	<1-22.2
MW-3 (downgradient)	5.02-5.89 (1)	85.0-249	<0.10-<0.10 (0)	21.9-28 (8)	1.98-2.73 (0)	<0.10-0.28 (1)	52-183 (0)	<2-1.0
MW-4 (downgradient)	5.11-5.89 (1)	27.4-75.2	<0.10-0.14 (0)	2-30.3 (2)	<1.00-2.4 (0)	<0.100-<0.20 (0)	<4-132 (0)	<1-5.3

DISCUSSION:

The data for the upgradient well are below the ground water standards for all parameters except pH and ammonia. There is one exceedance for ammonia, and the pH values during each sample event are lower than the ground water standard. For the downgradient wells there are exceedances for pH, chloride, and ammonia. There is only 1 pH exceedance, and the ammonia exceedance appears to correlate with the upgradient sample event with the excursion. The conductivity measurements appear to be higher for the downgradient wells than the upgradient wells. The chloride ranges for the downgradient wells are higher than the upgradient well and there are excursions for all the downgradient wells.

RECOMMENDATIONS:

A statistical evaluation of the upgradient and downgradient wells is needed to evaluate whether there is seepage from the lagoons into ground water. If monitoring results indicate that any unit has contaminated the ground water, the permittee shall submit a corrective action plan within 60 days of being notified by the DEQ Regional Office. The plan shall set forth the steps to be taken by the permittee to ensure that the

Ground Water Monitoring Data Evaluation

Bennie's MHP STP

VPDES Permit No. VA0061042

Page 2 of 4

contamination source is eliminated, that the contaminant plume is contained on the permittee's property, and ensure that any leakage to surface water does not result in a violation of water quality standards.

Unless discontinued under an approved corrective action plan, ground water monitoring shall continue. The wells have been sampled eleven times since 2007. Given the quantity of ground water monitoring data, the monitoring frequency shall be reduced from quarterly to annual.


Ground Water Monitoring Data

MW-1 (Upgradient) 751.87 ft top of PVC elevation										
Well	Date	DTW ft	pH SU	Sp Cond. umho/cm	Nitrate mg/L	Chloride mg/L	TOC mg/L	Ammonia mg/L	TDS mg/L	E. coli #/100 mL
WQS			5.5-8.5		5	25	10	0.025	250	
QL required by GWMP						1	0.5	0.1		
1	3/9/2010	5.25	4.17	24	0.16	2	0.74	<0.20	120	<1
1	12/22/2009	6.73	5.41	25	0.18	2	0.46	<0.20	12	<1
1	9/22/2009	11.82	5.33	22	<0.10	2	1.00	<0.20	14	<1
1	6/30/2009	7.65	5.30	26	0.12	2	0.36	<0.20	27	<1
1	3/19/2009	8.02	5.23	27	0.17	2	0.33	<0.20	14	<1
1	12/29/2008	8.60	5.17	24	0.1	1	2.35	0.48	5	<1
1	5/7/2008	6.35	5.23	12.5	0.164	1.69	<0.10	<0.10	23	<2
1	2/25/2008	7.60	5.08	27.2	0.245	2	<0.10	<0.10	35	<2
1	11/29/2007				<0.10	2.65	<1.00	<0.10	12	<2
1	8/7/2007	10.80	4.53	22.0	0.136	3.46	0.81	<0.10	34	1
1	4/19/2007				0.23	6.03	<1.00	<0.10	26	<2

MW-2 (Downgradient) 737.84 ft top of PVC elevation										
Well	Date	DTW ft	pH SU	Sp Cond. umho/cm	Nitrate mg/L	Chloride mg/L	TOC mg/L	Ammonia mg/L	TDS mg/L	E. coli #/100 mL
WQS			5.5-8.5		5	25	10	0.025	250	
2	3/9/2010	5.11	4.60	209	0.15	31	2.62	<0.20	204	<1
2	12/22/2009	5.06	5.32	210	0.12	30	2.24	<0.20	117	<1
2	9/22/2009	6.41	5.55	200	<0.10	30	2.60	<0.20	122	22.2
2	6/30/2009	5.02	5.51	207	0.11	30	2.12	<0.20	119	<1
2	3/19/2009	5.16	5.51	209	<0.10	28	2.44	<0.20	134	<1
2	12/29/2008	5.27	5.45	207	<0.10	27	2.4	0.36	107	<1
2	5/7/2008	6.20	5.92	15.1	<0.10	2.17	<1.00	<0.10	34	<2
2	2/25/2008	6.90	5.69	27.8	<0.100	2.55	1.05	<0.10	48	<2
2	11/29/2007				<0.100	24	2.22	<0.10	133	<2
2	8/7/2007	6.00	5.18	164.7	<0.100	23	2.37	<0.10	139	<2
2	4/19/2007				<0.100	28	2.01	<0.10	122	<2

MW-3 (Downgradient) 737.36 ft top of PVC elevation										
Well	Date	DTW ft	pH SU	Sp Cond. umho/cm	Nitrate mg/L	Chloride mg/L	TOC mg/L	Ammonia mg/L	TDS mg/L	E. coli #/100 mL
WQS			5.5-8.5		5	25	10	0.025	250	
3	3/9/2010	5.83	5.02	231	<0.10	25	2.73	<0.20	185	<1
3	12/22/2009	5.89	5.53	240	<0.10	26	2	<0.20	146	<1
3	9/22/2009	6.86	5.71	220	<0.10	28	2.47	0.28	162	1.0
3	6/30/2009	5.59	5.84	235	<0.10	27	1.98	<0.20	175	<1
3	3/19/2009	5.72	5.80	241	<0.10	25	2.35	<0.20	144	<1
3	12/29/2008	5.53	5.68	249	<0.10	25	2.7	<0.20	52	<1
3	5/7/2008	6.2	5.89	85.0	<0.10	24	2.0	<0.10	156	<2
3	2/25/2009				<0.10	27.7	2.37	<0.10	171	<2
3	11/29/2007				<0.100	22.2	2.16	<0.10	162	<2
3	8/7/2007	6.55	5.60	169.4	<0.100	21.9	2.40	<0.10	183	<2
3	4/19/2007				<0.100	27.9	1.92	<0.10	142	<2

MW-4 (Downgradient)						738.68 top of PVC elevation				
Well	Date	DTW ft	pH SU	Sp Cond. umho/cm	Nitrate mg/L	Chloride mg/L	TOC mg/L	Ammonia mg/L	TDS mg/L	E. coli #/100 mL
WQS			5.5-8.5		5	25	10	0.025	250	
4	3/9/2010	5.24	5.11	31	0.11	3	0.55	<0.20	38	<1
4	12/22/2009	4.95	5.87	31	0.14	3	0.53	<0.20	19	<1
4	9/22/2009	8.77	5.89	30	<0.10	3	1.63	<0.20	28	5.3
4	6/30/2009	5.09	5.87	31	<0.10	2	0.20	<0.20	48	<1
4	3/19/2009	5.21	5.81	31	<0.10	2	0.24	<0.20	18	<1
4	12/29/2008	6.78	5.65	31	<0.10	3	0.39	<0.20	26	<1
4	5/7/2008	5.45	5.55	75.2	<0.10	26.2	2.43	<0.10	132	<2
4	2/25/2008				<0.10	30.3	2.34	<0.10	120	<2
4	11/29/2007				<0.100	3.20	<1.00	<0.10	22	<2
4	8/7/2007	8.30	5.63	27.4	<0.100	<1.00	<1.00	<0.10	<4	<2
4	4/19/2007				0.109	4.02	<1.00	<0.10	32	<2

FORWARD of ALL REISSUANCES 

VA0061042

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DEC 20 2006

DEQ SCRO

Groundwater Monitoring Program

Bennie's Mobile Home Park
6080 Campbell Highway
Lynchburg, Virginia 24501

submitted to

Mr Bruce Bunnell
6080 Campbell Highway
Lynchburg, Virginia 24501

prepared for

Mr Bruce Bunnell
Bennie's Mobile Home Park
6080 Campbell Highway
Lynchburg, Virginia 24501

prepared by

B. Scott Gresham, P.E.
Hurt & Proffitt, Inc.
2524 Langhorne Road
Lynchburg, Virginia 24501

date

December 18, 2006

submitted by

HURT & PROFFITT
INCORPORATED



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2524 Langhorne Road - Lynchburg, VA 24501
Toll Free 800.242.4906 Main 434.847.7796
Fax 434.847.0047 www.handp.com



IV. HYDROGEOLOGIC AND GEOTECHNICAL

A. System Description

The ground water monitoring system consists of four (4) monitoring wells, one up-gradient well, labeled MW-1, and three down-gradient wells, labeled MW-2, MW-3 and MW-4. The attached Map indicates the location of the monitoring wells and their relationship to the facilities. The locations of the wells were determined upon a complete review of the known hydraulic data for the site.

The ground surface elevation of the monitoring wells was determined upon completion of monitoring well installation. Additionally, a permanent mark was placed in the top of all of the inner casings and elevations were determined for this mark. This mark will be used to determine the water column depth. The elevation of the permanent mark for each monitoring well is located in the table below:

Monitoring Well ID	Top of PVC Elevation (ft)
MW-1	751.87
MW-2	737.84
MW-3	737.36
MW-4	738.68

All monitoring wells at the site will be monitored quarterly for a period of two years and tested for pH, Total Dissolved Solids, Conductivity, Total Organic Carbon, Chlorides, E. Coli, nitrates and Ammonia.



B. Boring Records

This site had four borings recorded in the geologic investigation. The borings were converted into monitoring wells. The well depths ranged from 15 to 40 feet. These were recorded on the bore logs located in Appendix 2.

C. Description of Soil Units

This site is located in the Alligator Back Formation of the Lynchburg Group. The chief lithologic rock types expected to be encountered are mica gneiss, schist, quartzite, graphitic phyllite, marble and metabasalt. The modern sediment over laying the bedrock was visually classified during the monitoring well installation. The soils classified as a Sandy SILT (ML) with Elastic SILT (MH) or Silty SAND (SM) encountered near the existing ground surface. The soil classifications were recorded on the bore logs located in Appendix 2.

D. Water Table Information

The water table at the site varies from 745.69 ft above sea level to 731.42 feet above sea level. This data is presented in Appendix 3 of this report. The ground water is flowing southeast towards an intermittent stream. This is shown on the 2000 potentiometric map in Appendix 1. There are no pumping stations near the facility that would alter the flow direction or rate.

E. Aquifer Description

The upper most aquifer is unconfined and has an estimated thickness of 25 feet to 45 feet. There were no apparent confining layers encountered during the test boring operation.



3). Documentation

The abandonment of any well shall be documented in writing. A copy of this report of abandonment shall be forwarded to the Department of Environmental Quality within 30 days of the action taken. The operator shall indicate the depth of the hole, depth of water (if present), list the sequential actions taken during the abandonment process, indicate the hole/pipe size, quantity of material (by type) being placed into the hole and ratio of bentonite and cement used in grouts. Additional information might include whether pumping the well dry was attempted and if successful, the amount of time elapsed between hole de-watering and filling.

VI. SAMPLING & ANALYSIS

A. Sample Collection

Reference documents for this section are EPA Document FT-7.02 "Ground Water Sample Acquisition". Methods and definitions therein shall be used in the practice and procedures for sampling. This document and the guidance provided by FT-7.02, Section 5 shall govern the purging and sampling unless otherwise approved in writing.

Always measure the water elevation in the well and the depth to the bottom of the well (for evidence of siltation) before purging the wells. A water level probe marked in increments of 0.01 ft. shall be used to measure each. Report the measurement to the nearest 0.01-foot.

Completely purge each well of all stagnant water in order that fresh formation water from the surrounding soil/rock layers will enter the hole and be tested. Purging should proceed at a pace that does not cause excessive agitation of incoming formation water. The rate of evacuation



1) Sampling Equipment

A water level probe marked in increments of 0.01 ft. shall be used to measure each water level and the depth of the well.

A dedicated bailer made of PTFE or stainless steel shall be used for purging and sampling.

Sterile gloves should be worn when handling equipment that will contact the water to be tested. Care should be taken to prevent contact between soils and the purging equipment. Purge water is to be collected and disposed of by land application.

New sampling containers shall be used for each sampling event.

2) Sampling Order

The sampler must be thoroughly cleaned between each application. Samples shall be recovered in order of their volatilization sensitivity. The actual procedures for extracting and containerizing the samples will depend upon the parameters to be tested; therefore, the sampler shall follow the procedures recommended by EPA SW-846 for taking the samples. Sampling rates generally may not exceed a rate of 4.75 L/min. (1.25 gal./min.). Rates may be varied to provide accurate samples.

Sampling shall proceed from monitoring well to monitoring well in the following order:

- MW-1
- MW-2
- MW-3
- MW-4

The order in which the samples are to be collected and containerized is listed below:



- Total Dissolved Solids
- Total Organic Carbon
- Chlorides
- E. Coli
- Nitrates
- Ammonia

Field measurements of pH, specific conductance, and temperature shall be performed at the beginning of sampling for each well, and again at the finish, as a check for stability of water samples over time.

The same equipment shall be used for each sampling event. Equipment serial numbers or Laboratory numbers shall be used to identify the testing equipment. If a different piece of equipment is used, it shall be noted on the calibration log.

Instrument calibration for field measurement equipment shall be performed and recorded before leaving the Laboratory for each sampling event. The pre-field tests are to include calibration checks specific to the equipment used in accordance with the methods reported on the certificate of analysis. Where appropriate, measurements shall be made on real or synthetic samples with compositions similar to those of the samples expected to be collected. Documentation of all pre-field equipment checks and calibration and container storage and preparation shall be kept and submitted with the report of test results.

3) Sample Preservatives and Handling

All containers shall meet EPA standards for cleanliness suitable for this work. All containers shall be new and meet EPA Level 2 requirements. Recycled (decontaminated) containers shall not be used.



the statistical tests shall be performed by averaging the existing data. [In other words, zero (0) should never be substituted for missing data.]

3. Outlier Values

Values that differ significantly from the mean may indicate a problem in the testing, or indicate contamination of the well in question. Test data obtained from new wells may contain outliers; these are obviously difficult to recognize due to the fact that there is no background data. However, as time progresses and quarterly tests are performed, the data will establish a background with which new test well data may be compared. Any outlier values (compared with the established background data) indicate a need to retest that well within 2 weeks to verify the accuracy of the first test. All testing documentation normally used for a full phase one test should be supplied even if testing is only being performed on one constituent.

The analyzer shall use experience and comparisons with background data to evaluate the accuracy of data. If the cause of the outlying value can be documented and corrected, the technical reviewer should attempt to have the owner/operator do so without delay. If additional tests verify that the suspected outlying data is actually accurate, then all data (both original and verification) shall be used for statistical averaging.

4. Tests to be performed for statistical analysis are:

Average Replicate T-test, Standard deviation analysis, and Arithmetic mean comparison. These analyses are to be performed using Downgradient Upgradient Monitoring Program for Statistics (DUMPStat). A summary of how DUMPStat performs its analytical procedures is included in Appendix 5.



5. Data to be Recorded and Format

All reports should include the well number, the date of testing, the constituents to be tested, and the measuring units for each. All data generated from the ground water monitoring program should be managed in a spread sheet format to ensure adequate evaluation of ground water quality throughout the life and post-closure care period for the facility.

For newly established monitoring wells, the operator shall submit to the Director of Waste Management the quarterly results of the laboratory tests on the ground water from each well. This information shall be submitted within 15 days after completion of the quarterly tests.

7. Data Comparisons

A hydraulically upgradient well must be in place to provide a representative background ground water quality standard for the site. It must not be affected by operations at the site. Quarterly testing shall be performed to provide the standard. Wells hydraulically down-gradient of the upgradient well must also be tested quarterly for the first two years and semi-annually there after to provide additional background data for future analysis.

Statistical evaluation shall include both down-gradient wells individually to upgradient and each well to its own background.

8. Statistical Differences

If test results show a significant difference between the well data and the background data of itself or the up-gradient well, the operator shall have 30 days to withdraw additional samples from the wells in question and re-tested. Each additional sample shall be divided, with two independent and redundant tests performed.



If the additional tests confirm that a significant change has occurred, the operator shall notify the VDEQ in writing within 14 days that the facility may be affecting ground water quality and that the facility is implementing an Assessment Monitoring Program.

Bennie's Mobile Home Park

MONITORING WELL	READING DATE	GROUND ELEV.	WELL DEPTH	BOTTOM OF WELL ELEV.	TOP OF WELL CASING ELEV.	DEPTH TO WATER	STATIC WATER LEVEL ELEVATION	Δz (ft)	d (ft)
MW-1	11/30/06	751.65	39.45	712.20	751.87	6.18	745.69	N/A	N/A
MW-2	11/30/06	733.77	30.05	703.72	737.84	2.47	735.37	10.32	346
MW-3	11/30/06	735.86	15.04	720.82	737.36	3.04	734.32	11.37	406
MW-4	11/30/06	736.93	15.04	721.89	738.68	3.33	735.35	10.34	389

MW #	hydraulic gradient, i	Aquifer Thickness, B, (ft)	Hydraulic Conductivity, K , (ft/day) estimated	Aquifer Transmissivity, T , (ft ² /day)	Est. Flow Rate per unit width, q , (gpd/ft)	Advective Flow Velocity, v (ft/day)*
MW-2	0.030	31.65	1.60	50.64	0.60	0.12
MW-3	0.028	13.50	1.60	21.60	0.24	0.11
MW-4	0.027	13.46	1.60	21.54	0.23	0.11

Hydraulic Gradient calculated using MW-1 as datum

$$i_{\min} = 0.027$$

$$i_{\max} = 0.030$$

$$i_{\text{avg}} = 0.007$$

* Based on estimated effective porosity of 0.4

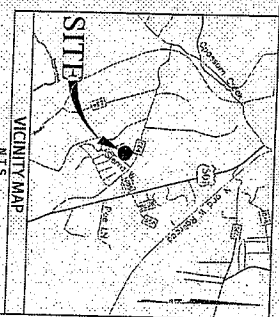
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PROJECT NO.	20650967
G. L. NO.	24-03-02.9
FILE NO.	
DATE	08/16/06
DRAWING BY	JHD
CHECKED BY	JMS

Attachment G

Wasteload and Limit Calculations

- **Mixing Zone Calculations (MIXER)**
- **Effluent Data**
- **Antidegradation Wasteload Allocation Spreadsheet**
- **STATS Program Results (ammonia, TRC)**

Mixing Zone Predictions for

Bennie's MHP STP

Effluent Flow = 0.035 MGD
Stream 7Q10 = 0.30 MGD
Stream 30Q10 = 0.42 MGD
Stream 1Q10 = 0.26 MGD
Stream slope = 0.0051 ft/ft
Stream width = 15 ft
Bottom scale = 2
Channel scale = 1

Mixing Zone Predictions @ 7Q10

Depth = .1126 ft
Length = 1805.36 ft
Velocity = .3071 ft/sec
Residence Time = .068 days

Recommendation:

A complete mix assumption is appropriate for this situation and the entire 7Q10 may be used.

Mixing Zone Predictions @ 30Q10

Depth = .1355 ft
Length = 1544.32 ft
Velocity = .3467 ft/sec
Residence Time = .0516 days

Recommendation:

A complete mix assumption is appropriate for this situation and the entire 30Q10 may be used.

Mixing Zone Predictions @ 1Q10

Depth = .1043 ft
Length = 1925.79 ft
Velocity = .292 ft/sec
Residence Time = 1.8322 hours

Recommendation:

A complete mix assumption is appropriate for this situation providing no more than 54.58% of the 1Q10 is used.

Bennie's MHP STP (VA0061042)

Effluent pH (S.U.)		
Date Due	min	max
10-Sep-05	6.4	7.3
10-Oct-05	6	6.7
10-Nov-05	6.3	7
10-Dec-05	6.2	7
10-Jan-06	6.7	7.4
10-Feb-06	6.5	7.1
10-Mar-06	6.3	7
10-Apr-06	6.6	7.1
10-May-06	6.2	6.7
10-Jun-06	6.3	7.4
10-Jul-06	6.6	7.2
10-Aug-06	6.3	7.3
10-Sep-06	6.6	7.3
10-Oct-06	6.3	7.3
10-Nov-06	6.5	7.4
10-Dec-06	6.1	6.9
10-Jan-07	6	6.3
10-Feb-07	6.1	7
10-Mar-07	6.1	6.6
10-Apr-07	6.1	6.7
10-May-07	6.2	6.7
10-Jun-07	6.2	6.9
10-Jul-07	6.2	6.9
10-Aug-07	6.3	6.8
10-Sep-07	6.1	7.4
10-Oct-07	6.4	7.4
10-Nov-07	6.6	7.3
10-Dec-07	6.6	7.1
10-Jan-08	6.3	7.5
10-Feb-08	6.9	7.7
10-Mar-08	6.6	7.7
10-Apr-08	6.5	7.4
10-May-08	6.2	7.1
10-Jun-08	6.7	7.2
10-Jul-08	6.7	7.2
10-Aug-08	6.5	7.4
10-Sep-08	6.5	7.3
10-Oct-08	6.2	7.4
10-Nov-08	6.2	7.1
10-Dec-08	6.3	7.2
10-Jan-09	6.9	7.4
10-Feb-09	6	7.3
10-Mar-09	6.2	7.1
10-Apr-09	6.7	7.4
10-May-09	6.5	7.4
10-Jun-09	6.5	7.2
10-Jul-09	6.8	7.3
10-Aug-09	6.5	7.2
10-Sep-09	6.6	7.2
10-Oct-09	6.6	7.3

90th Percentile pH	7.4	S.U.
10th Percentile pH	6.1	S.U.

FRESHWATER WATER QUALITY CRITERIA / WASTELOAD ALLOCATION ANALYSIS

Facility Name:

Bennie's MHP STP

Permit No.:

VA0061042

Receiving Stream:

Opossum Creek

Version: OWP Guidance Memo 00-2011 (8/24/00)

Stream Information

Mean Hardness (as CaCO₃) = 46 mg/L
 90% Temperature (Annual) = 23 deg C
 90% Temperature (Wet season) = 18 deg C
 90% Maximum pH = 7.9 SU
 10% Maximum pH = 7.2 SU
 Tier Designation (1 or 2) = 2
 Public Water Supply (PWS) Y/N? = Y
 Trout Present Y/N? = N
 Early Life Stages Present Y/N? = Y

Stream Flows

1Q10 (Annual) = 0.26 MGD
 7Q10 (Annual) = 0.3 MGD
 30Q10 (Annual) = 0.42 MGD
 1Q10 (Wet season) = 0.85 MGD
 30Q10 (Wet season) = 1.28 MGD
 30Q5 = 0.58 MGD
 Harmonic Mean = 1.52 MGD

Mixing Information

Annual - 1Q10 Mix = 54.58 %
 - 7Q10 Mix = 100 %
 - 30Q10 Mix = 100 %
 Wet Season - 1Q10 Mix = 100 %
 - 30Q10 Mix = 100 %

Effluent Information

Mean Hardness (as CaCO₃) = 46 mg/L
 90% Temp (Annual) = 23 deg C
 90% Temp (Wet season) = 18 deg C
 90% Maximum pH = 7.4 SU
 10% Maximum pH = 6.1 SU
 Discharge Flow = 0.035 MGD

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria			Wasteload Allocations			Antidegradation Baseline			Antidegradation Allocations			Most Limiting Allocations		
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)
Acenaphthene	0	-	-	6.7E+02	9.9E+02	-	-	1.2E+04	1.7E+04	-	-	1.2E+03	1.7E+03	-	-	1.2E+03
Acrolein	0	-	-	6.1E+00	9.3E+00	-	-	6.1E-01	9.3E-01	-	-	1.1E+01	1.6E+01	-	-	1.1E+01
Acrylonitrile ^c	0	-	-	5.1E-01	2.5E+00	-	-	2.3E-01	1.1E+02	-	-	2.3E+00	1.1E+01	-	-	2.3E+00
Aldrin ^c	0	3.0E+00	-	4.9E-04	5.0E-04	1.5E+01	-	2.2E-02	2.2E-02	7.5E-01	-	4.9E-05	5.0E-05	6.3E+00	-	2.2E-03
Ammonia-N (mg/l) (Yearly)	0	1.34E+01	1.77E+00	-	-	6.8E+01	2.3E+01	-	-	3.03E+00	4.42E-01	-	-	2.6E+01	5.7E+00	-
Ammonia-N (mg/l) (High Flow)	0	1.08E+01	2.31E+00	-	-	2.7E+02	8.7E+01	-	-	2.70E+00	5.77E-01	-	-	6.8E+01	2.2E+01	-
Anthracene	0	-	-	8.3E+03	4.0E+04	-	-	1.5E+05	7.0E+05	-	-	8.3E+02	4.0E+03	-	-	1.5E+04
Antimony	0	-	-	5.6E+00	6.4E+02	-	-	9.8E+01	1.1E+04	-	-	5.6E-01	6.4E+01	-	-	9.8E+00
Arsenic	0	3.4E+02	1.5E+02	1.0E+01	-	1.7E+03	1.4E+03	1.8E+02	-	8.5E+01	3.8E+01	1.0E+00	-	7.2E+02	3.6E+02	1.8E+01
Barium	0	-	-	2.0E+03	-	-	-	3.5E+04	-	-	-	2.0E+02	-	-	-	3.5E+03
Benzene ^c	0	-	-	2.2E+01	5.1E+02	-	-	9.8E+02	2.3E+04	-	-	2.2E+00	5.1E+01	-	-	9.8E+01
Benzidine ^c	0	-	-	8.6E-04	2.0E-03	-	-	3.8E-02	8.9E-02	-	-	8.6E-05	2.0E-04	-	-	3.8E-03
Benzo (a) anthracene ^c	0	-	-	3.8E-02	1.8E-01	-	-	1.7E+00	8.0E+00	-	-	3.8E-03	1.8E-02	-	-	1.7E-01
Benzo (b) fluoranthene ^c	0	-	-	3.8E-02	1.8E-01	-	-	1.7E+00	8.0E+00	-	-	3.8E-03	1.8E-02	-	-	1.7E-01
Benzo (k) fluoranthene ^c	0	-	-	3.8E-02	1.8E-01	-	-	1.7E+00	8.0E+00	-	-	3.8E-03	1.8E-02	-	-	1.7E-01
Benzo (a) pyrene ^c	0	-	-	3.8E-02	1.8E-01	-	-	1.7E+00	8.0E+00	-	-	3.8E-03	1.8E-02	-	-	1.7E-01
Bis(2-Chloroethyl) Ether ^c	0	-	-	3.0E-01	5.3E+00	-	-	1.3E+01	2.4E+02	-	-	3.0E-02	5.3E-01	-	-	1.3E+00
Bis(2-Chloroisopropyl) Ether ^c	0	-	-	1.4E+03	6.5E+04	-	-	2.5E+04	1.1E+06	-	-	1.4E+02	6.5E+03	-	-	2.5E+03
Bis(2-Ethylhexyl) Phthalate ^c	0	-	-	1.2E+01	2.2E+01	-	-	5.3E+02	9.8E+02	-	-	1.2E+00	2.2E+00	-	-	5.3E+01
Bromoform ^c	0	-	-	4.3E+01	1.4E+03	-	-	1.9E+03	6.2E+04	-	-	4.3E+00	1.4E+02	-	-	1.9E+02
Butylbenzylphthalate	0	-	-	1.5E+03	1.9E+03	-	-	2.6E+04	3.3E+04	-	-	1.5E+02	1.9E+02	-	-	2.6E+03
Cadmium	0	1.6E+00	6.2E-01	5.0E+00	-	8.3E+00	5.9E+00	8.8E+01	-	4.1E-01	1.5E-01	5.0E-01	-	3.4E+00	1.5E+00	8.8E+00
Carbon Tetrachloride ^c	0	-	-	2.3E+00	1.6E+01	-	-	1.0E+02	7.1E+02	-	-	2.3E-01	1.6E+00	-	-	1.0E+01
Chlordane ^c	0	2.4E+00	4.3E-03	8.0E-03	8.1E-03	1.2E+01	4.1E-02	3.6E-01	3.6E-01	6.0E-01	1.1E-03	8.0E-04	8.1E-04	5.1E+00	1.0E-02	3.6E-02
Chloride	0	8.6E+05	2.3E+05	2.5E+05	-	4.3E+06	2.2E+06	4.4E+06	-	2.2E+05	5.8E+04	2.5E+04	-	1.8E+06	5.5E+05	4.4E+05
TRC	0	1.9E+01	1.1E+01	-	-	9.6E+01	1.1E+02	-	-	4.8E+00	2.8E+00	-	-	4.0E+01	2.6E+01	-
Chlorobenzene	0	-	-	1.3E+02	1.6E+03	-	-	2.3E+03	2.8E+04	-	-	1.3E+01	1.6E+02	-	-	2.3E+02

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Chlorobromomethane ^c	0	-	-	4.0E+00	1.3E+02	-	-	1.8E+02	5.8E+03	-	-	4.0E+01	1.3E+01	-	-	1.8E+01	5.8E+02	-	-	1.8E+01	5.8E+02
Chloroform	0	-	-	3.4E+02	1.1E+04	-	-	6.0E+03	1.9E+05	-	-	3.4E+01	1.1E+03	-	-	6.0E+02	1.9E+04	-	-	6.0E+02	1.9E+04
2-Chloronaphthalene	0	-	-	1.0E+03	1.6E+03	-	-	1.8E+04	2.8E+04	-	-	1.0E+02	1.6E+02	-	-	1.8E+03	2.8E+03	-	-	1.8E+03	2.8E+03
2-Chlorophenol	0	-	-	8.1E+01	1.5E+02	-	-	1.4E+03	2.6E+03	-	-	8.1E+00	1.5E+01	-	-	1.4E+02	2.6E+02	-	-	1.4E+02	2.6E+02
Chlorpyrifos	0	8.3E-02	4.1E-02	-	-	4.2E-01	3.9E-01	-	-	2.1E-02	1.0E-02	-	-	1.7E-01	9.8E-02	-	-	1.7E-01	9.8E-02	-	-
Chromium III	0	3.0E+02	3.9E+01	-	-	1.5E+03	3.8E+02	-	-	7.5E+01	9.8E+00	-	-	6.4E+02	9.4E+01	-	-	6.4E+02	9.4E+01	-	-
Chromium VI	0	1.6E+01	1.1E+01	-	-	8.1E+01	1.1E+02	-	-	4.0E+00	2.8E+00	-	-	3.4E+01	2.8E+01	-	-	3.4E+01	2.8E+01	-	-
Chromium, Total	0	-	-	1.0E+02	-	-	-	1.8E+03	-	-	-	1.0E+01	-	-	-	1.8E+02	-	-	-	1.8E+02	-
Chrysene ^c	0	-	-	3.8E-03	1.8E-02	-	-	1.7E-01	8.0E-01	-	-	3.8E-04	1.8E-03	-	-	1.7E-02	8.0E-02	-	-	1.7E-02	8.0E-02
Copper	0.82	6.5E+00	4.6E+00	1.3E+03	-	2.9E+01	3.7E+01	2.3E+04	-	2.2E+00	1.8E+00	1.3E+02	-	1.3E+01	9.9E+00	2.3E+03	-	1.3E+01	9.9E+00	2.3E+03	-
Cyanide, Free	0	2.2E+01	5.2E+00	1.4E+02	1.6E+04	1.1E+02	5.0E+01	2.5E+03	2.8E+05	5.5E+00	1.3E+00	1.4E+01	1.6E+03	4.6E+01	1.2E+01	2.5E+02	2.8E+04	4.6E+01	1.2E+01	2.5E+02	2.8E+04
DDD ^c	0	-	-	3.1E-03	3.1E-03	-	-	1.4E-01	1.4E-01	-	-	3.1E-04	3.1E-04	-	-	1.4E-02	1.4E-02	-	-	1.4E-02	1.4E-02
DDE ^c	0	-	-	2.2E-03	2.2E-03	-	-	9.8E-02	9.8E-02	-	-	2.2E-04	2.2E-04	-	-	9.8E-03	9.8E-03	-	-	9.8E-03	9.8E-03
DDT ^c	0	1.1E+00	1.0E-03	2.2E-03	2.2E-03	5.6E+00	9.6E-03	9.8E-02	9.8E-02	2.8E-01	2.5E-04	2.2E-04	2.2E-04	2.3E+00	2.4E-03	9.8E-03	9.8E-03	2.3E+00	2.4E-03	9.8E-03	9.8E-03
Demeton	0	-	1.0E-01	-	-	-	9.8E-01	-	-	-	2.5E-02	-	-	-	2.4E-01	-	-	-	2.4E-01	-	-
Diazinon	0	1.7E-01	1.7E-01	-	-	8.6E-01	1.9E+00	-	-	4.3E-02	4.3E-02	-	-	3.6E-01	4.1E-01	-	-	3.6E-01	4.1E-01	-	-
Dibenz(a,h)anthracene ^c	0	-	-	3.8E-02	1.8E-01	-	-	1.7E+00	8.0E+00	-	-	3.8E-03	1.8E-02	-	-	1.7E-01	8.0E-01	-	-	1.7E-01	8.0E-01
1,2-Dichlorobenzene	0	-	-	4.2E+02	1.3E+03	-	-	7.4E+03	2.3E+04	-	-	4.2E+01	1.3E+02	-	-	7.4E+02	2.3E+03	-	-	7.4E+02	2.3E+03
1,3-Dichlorobenzene	0	-	-	3.2E+02	9.6E+02	-	-	5.6E+03	1.7E+04	-	-	3.2E+01	9.6E+01	-	-	5.6E+02	1.7E+03	-	-	5.6E+02	1.7E+03
1,4-Dichlorobenzene	0	-	-	6.3E+01	1.9E+02	-	-	1.1E+03	3.3E+03	-	-	6.3E+00	1.9E+01	-	-	1.1E+02	3.3E+02	-	-	1.1E+02	3.3E+02
3,3-Dichlorobenzidine ^c	0	-	-	2.1E-01	2.8E-01	-	-	9.3E+00	1.2E+01	-	-	2.1E-02	2.8E-02	-	-	9.3E-01	1.2E+00	-	-	9.3E-01	1.2E+00
Dichlorobromomethane ^c	0	-	-	5.9E+00	1.7E+02	-	-	2.4E+02	7.6E+03	-	-	5.5E-01	1.7E+01	-	-	2.4E+01	7.6E+02	-	-	2.4E+01	7.6E+02
1,2-Dichloroethane ^c	0	-	-	3.8E+00	3.7E+02	-	-	1.7E+02	1.6E+04	-	-	3.8E-01	3.7E+01	-	-	1.7E+01	1.6E+03	-	-	1.7E+01	1.6E+03
1,1-Dichloroethylene	0	-	-	3.3E+02	7.1E+03	-	-	5.8E+03	1.2E+05	-	-	3.3E+01	7.1E+02	-	-	5.8E+02	1.2E+04	-	-	5.8E+02	1.2E+04
1,2-Trans-dichloroethylene	0	-	-	1.4E+02	1.0E+04	-	-	2.5E+03	1.8E+05	-	-	1.4E+01	1.0E+03	-	-	2.5E+02	1.8E+04	-	-	2.5E+02	1.8E+04
2,4-Dichlorophenol	0	-	-	7.7E+01	2.9E+02	-	-	1.4E+03	5.1E+03	-	-	7.7E+00	2.9E+01	-	-	1.4E+02	5.1E+02	-	-	1.4E+02	5.1E+02
2,4-Dichlorophenoxy acetic acid (2,4-D)	0	-	-	1.0E+02	-	-	-	1.8E+03	-	-	-	1.0E+01	-	-	-	1.8E+02	-	-	-	1.8E+02	-
1,2-Dichloropropane ^c	0	-	-	5.0E+00	1.5E+02	-	-	2.2E+02	6.7E+03	-	-	5.0E-01	1.5E+01	-	-	2.2E+01	6.7E+02	-	-	2.2E+01	6.7E+02
1,3-Dichloropropene ^c	0	-	-	3.4E+00	2.1E+02	-	-	1.5E+02	9.3E+03	-	-	3.4E-01	2.1E+01	-	-	1.5E+01	9.3E+02	-	-	1.5E+01	9.3E+02
Dieldrin ^c	0	2.4E-01	5.6E-02	5.2E-04	5.4E-04	1.2E+00	5.4E-01	2.3E-02	2.4E-02	6.0E-02	1.4E-02	5.2E-05	5.4E-05	5.1E-01	1.3E-01	2.3E-03	2.4E-03	5.1E-01	1.3E-01	2.3E-03	2.4E-03
Diethyl Phthalate	0	-	-	1.7E+04	4.4E+04	-	-	3.0E+05	7.7E+05	-	-	1.7E+03	4.4E+03	-	-	3.0E+04	7.7E+04	-	-	3.0E+04	7.7E+04
2,4-Dimethylphenol	0	-	-	3.8E+02	8.5E+02	-	-	6.7E+03	1.5E+04	-	-	3.8E+01	8.5E+01	-	-	6.7E+02	1.5E+03	-	-	6.7E+02	1.5E+03
Dimethyl Phthalate	0	-	-	2.7E+05	1.1E+06	-	-	4.7E+06	1.9E+07	-	-	2.7E+04	1.1E+05	-	-	4.7E+05	1.9E+06	-	-	4.7E+05	1.9E+06
Di-n-Butyl Phthalate	0	-	-	2.0E+03	4.5E+03	-	-	3.5E+04	7.9E+04	-	-	2.0E+02	4.5E+02	-	-	3.5E+03	7.9E+03	-	-	3.5E+03	7.9E+03
2,4-Dinitrophenol	0	-	-	6.9E+01	5.3E+03	-	-	1.2E+03	9.3E+04	-	-	6.9E+00	5.3E+02	-	-	1.2E+02	9.3E+03	-	-	1.2E+02	9.3E+03
2-Methyl-4,6-Dinitrophenol	0	-	-	1.3E+01	2.8E+02	-	-	2.3E+02	4.9E+03	-	-	1.3E+00	2.8E+01	-	-	2.3E+01	4.9E+02	-	-	2.3E+01	4.9E+02
2,4-Dinitrotoluene ^c	0	-	-	1.1E+00	3.4E+01	-	-	4.9E+01	1.5E+03	-	-	1.1E-01	3.4E+00	-	-	4.9E+00	1.5E+02	-	-	4.9E+00	1.5E+02
Dioxin 2,3,7,8-tetrachlorodibenzo-p-dioxin	0	-	-	5.0E-08	5.1E-08	-	-	8.8E-07	9.0E-07	-	-	5.0E-09	5.1E-09	-	-	8.8E-08	9.0E-08	-	-	8.8E-08	9.0E-08
1,2-Diphenylhydrazine ^c	0	-	-	3.6E-01	2.0E+00	-	-	1.6E+01	8.9E+01	-	-	3.6E-02	2.0E-01	-	-	1.6E+00	8.9E+00	-	-	1.6E+00	8.9E+00
Alpha-Endosulfan	0	2.2E-01	5.6E-02	6.2E+01	8.9E+01	1.1E+00	5.4E-01	1.1E+03	1.6E+03	5.5E-02	1.4E-02	6.2E+00	8.9E+00	4.8E-01	1.3E-01	1.1E+02	1.6E+02	4.8E-01	1.3E-01	1.1E+02	1.6E+02
Beta-Endosulfan	0	2.2E-01	5.6E-02	6.2E+01	8.9E+01	1.1E+00	5.4E-01	1.1E+03	1.6E+03	5.5E-02	1.4E-02	6.2E+00	8.9E+00	4.9E-01	1.3E-01	1.1E+02	1.6E+02	4.9E-01	1.3E-01	1.1E+02	1.6E+02
Alpha + Beta Endosulfan	0	2.2E-01	5.6E-02	-	-	1.1E+00	5.4E-01	-	-	5.5E-02	1.4E-02	-	-	4.8E-01	1.3E-01	-	-	4.8E-01	1.3E-01	-	-
Endosulfan Sulfate	0	-	-	6.2E+01	8.9E+01	-	-	1.1E+03	1.6E+03	-	-	6.2E+00	8.9E+00	-	-	1.1E+02	1.6E+02	-	-	1.1E+02	1.6E+02
Endrin	0	8.6E-02	3.6E-02	5.9E-02	6.0E-02	4.3E-01	3.4E-01	1.0E+00	1.1E+00	2.2E-02	9.0E-03	5.9E-03	6.0E-03	1.8E-01	8.6E-02	1.0E-01	1.1E-01	1.8E-01	8.6E-02	1.0E-01	1.1E-01
Endrin Aldehyde	0	-	-	2.9E-01	3.0E-01	-	-	5.1E+00	5.3E+00	-	-	2.9E-02	3.0E-02	-	-	5.1E-01	5.3E-01	-	-	5.1E-01	5.3E-01

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Ethylbenzene	0	-	-	5.3E+02	2.1E+03	-	-	9.3E+03	3.7E+04	-	-	5.3E+01	2.1E+02	-	-	9.3E+02	3.7E+03	-	-	9.3E+02	3.7E+03
Fluoranthene	0	-	-	1.3E+02	1.4E+02	-	-	2.3E+03	2.5E+03	-	-	1.3E+01	1.4E+01	-	-	2.3E+02	2.5E+02	-	-	2.3E+02	2.5E+02
Fluorene	0	-	-	1.1E+03	5.3E+03	-	-	1.9E+04	9.3E+04	-	-	1.1E+02	5.3E+02	-	-	1.9E+03	9.3E+03	-	-	1.9E+03	9.3E+03
Foaming Agents	0	-	-	5.0E+02	-	-	-	8.8E+03	-	-	-	5.0E+01	-	-	-	8.8E+02	-	-	-	8.8E+02	-
Guthion	0	-	1.0E-02	-	-	-	9.6E-02	-	-	-	2.5E-03	-	-	-	2.4E-02	-	-	-	2.4E-02	-	-
Heptachlor ^c	0	5.2E-01	3.8E-03	7.9E-04	7.9E-04	2.6E+00	3.6E-02	3.5E-02	3.5E-02	1.3E-01	9.5E-04	7.9E-05	7.9E-05	1.1E+00	9.1E-03	3.5E-03	3.5E-03	1.1E+00	9.1E-03	3.5E-03	3.5E-03
Heptachlor Epoxide ^c	0	5.2E-01	3.8E-03	3.9E-04	3.9E-04	2.6E+00	3.6E-02	1.7E-02	1.7E-02	1.3E-01	9.5E-04	3.9E-05	3.9E-05	1.1E+00	9.1E-03	1.7E-03	1.7E-03	1.1E+00	9.1E-03	1.7E-03	1.7E-03
Hexachlorobenzene ^c	0	-	-	2.8E-03	2.9E-03	-	-	1.2E-01	1.3E-01	-	-	2.8E-04	2.9E-04	-	-	1.2E-02	1.3E-02	-	-	1.2E-02	1.3E-02
Hexachlorobutadiene ^c	0	-	-	4.4E+00	1.8E+02	-	-	2.0E+02	8.0E+03	-	-	4.4E-01	1.8E+01	-	-	2.0E+01	8.0E+02	-	-	2.0E+01	8.0E+02
Hexachlorocyclohexane	0	-	-	2.6E-02	4.9E-02	-	-	1.2E+00	2.2E+00	-	-	2.6E-03	4.9E-03	-	-	1.2E-01	2.2E-01	-	-	1.2E-01	2.2E-01
Alpha-BHC ^c	0	-	-	9.1E-02	1.7E-01	-	-	4.0E+00	7.6E+00	-	-	9.1E-03	1.7E-02	-	-	4.0E-01	7.6E-01	-	-	4.0E-01	7.6E-01
Hexachlorocyclohexane BHC ^c	0	-	-	9.8E-01	1.8E+00	4.8E+00	-	4.4E+01	8.0E+01	2.4E-01	-	9.8E-02	1.8E-01	2.0E+00	-	4.4E+00	8.0E+00	2.0E+00	-	4.4E+00	8.0E+00
Hexachlorocyclohexane Gamma-BHC ^c (Lindane)	0	-	-	4.0E+01	1.1E+03	-	-	7.0E+02	1.9E+04	-	-	4.0E+00	1.1E+02	-	-	7.0E+01	1.9E+03	-	-	7.0E+01	1.9E+03
Hexachlorocyclopentadiene	0	-	-	1.4E+01	3.3E+01	-	-	6.2E+02	1.5E+03	-	-	1.4E+00	3.3E+00	-	-	6.2E+01	1.5E+02	-	-	6.2E+01	1.5E+02
Hexachloroethane ^c	0	-	-	2.0E+00	-	-	1.9E+01	-	-	-	5.0E-01	-	-	-	4.8E+00	-	-	-	4.8E+00	-	-
Hydrogen Sulfide	0	-	-	3.8E-02	1.8E-01	-	-	1.7E+00	8.0E+00	-	-	3.8E-03	1.8E-02	-	-	1.7E-01	8.0E-01	-	-	1.7E-01	8.0E-01
Indeno (1,2,3-cd) pyrene ^c	0	-	-	3.0E+02	-	-	-	5.3E+03	-	-	-	3.0E+01	-	-	-	5.3E+02	-	-	-	5.3E+02	-
Iron	0	-	-	3.5E+02	9.6E+03	-	-	1.6E+04	4.3E+05	-	-	3.5E+01	9.6E+02	-	-	1.6E+03	4.3E+04	-	-	1.6E+03	4.3E+04
Isophorone ^c	0	-	-	0.0E+00	-	-	0.0E+00	-	-	-	0.0E+00	-	-	-	0.0E+00	-	-	-	0.0E+00	-	-
Kepon	0	-	-	4.4E+01	5.0E+00	2.2E+02	4.8E+01	2.6E+02	-	1.1E+01	1.3E+00	1.5E+00	-	9.3E+01	1.2E+01	2.6E+01	-	9.3E+01	1.2E+01	2.6E+01	-
Lead	0	-	1.0E-01	-	-	-	9.6E-01	-	-	-	2.5E-02	-	-	-	2.4E-01	-	-	-	2.4E-01	-	-
Malathion	0	-	-	5.0E+01	-	-	-	8.8E+02	-	-	-	5.0E+00	-	-	-	8.8E+01	-	-	-	8.8E+01	-
Manganese	0	-	-	7.7E-01	-	-	7.1E+00	7.4E+00	-	3.5E-01	1.9E-01	-	-	3.0E+00	1.8E+00	-	-	3.0E+00	1.8E+00	-	-
Mercury	0	-	-	4.7E+01	1.5E+03	-	-	8.3E+02	2.6E+04	-	-	4.7E+00	1.5E+02	-	-	8.3E+01	2.6E+03	-	-	8.3E+01	2.6E+03
Methyl Bromide	0	-	-	4.6E+01	5.9E+03	-	-	2.0E+03	2.6E+05	-	-	4.6E+00	5.9E+02	-	-	2.0E+02	2.6E+04	-	-	2.0E+02	2.6E+04
Methylene Chloride ^c	0	-	3.0E-02	1.0E+02	-	-	2.9E-01	1.8E+03	-	-	7.5E-03	1.0E+01	-	-	7.2E-02	1.8E+02	-	-	7.2E-02	1.8E+02	-
Methoxychlor	0	-	0.0E+00	-	-	-	0.0E+00	-	-	-	0.0E+00	-	-	-	0.0E+00	-	-	-	0.0E+00	-	-
Mirex	0	9.5E+01	1.1E+01	6.1E+02	4.6E+03	4.8E+02	1.0E+02	1.1E+04	8.1E+04	2.4E+01	2.6E+00	6.1E+01	4.6E+02	2.0E+02	2.5E+01	1.1E+03	8.1E+03	2.0E+02	2.5E+01	1.1E+03	8.1E+03
Nickel	0	-	-	1.0E+04	-	-	-	1.8E+05	-	-	-	1.0E+03	-	-	-	1.8E+04	-	-	-	1.8E+04	-
Nitrate (as N)	0	-	-	1.7E+01	6.9E+02	-	-	3.0E+02	1.2E+04	-	-	1.7E+00	6.9E+01	-	-	3.0E+01	1.2E+03	-	-	3.0E+01	1.2E+03
Nitrobenzene	0	-	-	6.9E-03	3.0E+01	-	-	3.1E-01	1.3E+03	-	-	6.9E-04	3.0E+00	-	-	3.1E-02	1.3E+02	-	-	3.1E-02	1.3E+02
N-Nitrosodimethylamine ^c	0	-	-	3.3E+01	6.0E+01	-	-	1.5E+03	2.7E+03	-	-	3.3E+00	6.0E+00	-	-	1.5E+02	2.7E+02	-	-	1.5E+02	2.7E+02
N-Nitrosodiphenylamine ^c	0	-	-	5.0E-02	5.1E+00	-	-	2.2E+00	2.3E+02	-	-	5.0E-03	5.1E-01	-	-	2.2E-01	2.3E+01	-	-	2.2E-01	2.3E+01
N-Nitrosodi-n-propylamine ^c	0	-	-	6.6E+00	-	-	1.4E+02	6.3E+01	-	7.0E+00	1.7E+00	-	-	5.9E+01	1.6E+01	-	-	5.9E+01	1.6E+01	-	-
Nonylphenol	0	6.5E-02	1.3E-02	-	-	3.3E-01	1.2E-01	-	-	1.6E-02	3.3E-03	-	-	1.4E-01	3.1E-02	-	-	1.4E-01	3.1E-02	-	-
Parathion	0	-	1.4E-02	6.4E-04	6.4E-04	-	1.3E-01	2.8E-02	2.8E-02	-	-	3.5E-03	6.4E-05	-	-	3.4E-02	2.8E-03	-	-	3.4E-02	2.8E-03
PCB Total ^c	0	-	-	2.7E+00	3.0E+01	3.2E+01	5.5E+01	1.2E+02	1.3E+03	1.8E+00	1.4E+00	2.7E-01	3.0E+00	1.5E+01	1.4E+01	1.2E+01	1.3E+02	1.5E+01	1.4E+01	1.2E+01	1.3E+02
Pentachlorophenol ^c	0	6.3E+00	5.8E+00	2.7E+00	3.0E+01	3.2E+01	5.5E+01	1.2E+02	1.3E+03	1.8E+00	1.4E+00	2.7E-01	3.0E+00	1.5E+01	1.4E+01	1.2E+01	1.3E+02	1.5E+01	1.4E+01	1.2E+01	1.3E+02
Phenol	0	-	-	1.0E+04	8.6E+05	-	-	1.8E+05	1.5E+07	-	-	1.0E+03	8.6E+04	-	-	1.8E+04	1.5E+06	-	-	1.8E+04	1.5E+06
Pyrene	0	-	-	8.3E+02	4.0E+03	-	-	1.5E+04	7.0E+04	-	-	8.3E+01	4.0E+02	-	-	1.5E+03	7.0E+03	-	-	1.5E+03	7.0E+03
Radionuclides	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gross Alpha Activity (pCi/L)	0	-	-	1.5E+01	-	-	-	2.6E+02	-	-	-	1.5E+00	-	-	-	2.6E+01	-	-	-	2.6E+01	-
Beta and Photon Activity (mrem/yr)	0	-	-	4.0E+00	4.0E+00	-	-	7.0E+01	7.0E+01	-	-	4.0E-01	4.0E-01	-	-	7.0E+00	7.0E+00	-	-	7.0E+00	7.0E+00
Radium 226 + 228 (pCi/L)	0	-	-	5.0E+00	-	-	-	8.8E+01	-	-	-	5.0E-01	-	-	-	8.8E+00	-	-	-	8.8E+00	-
Uranium (ug/l)	0	-	-	3.0E+01	-	-	-	5.3E+02	-	-	-	3.0E+00	-	-	-	5.3E+01	-	-	-	5.3E+01	-

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria			Wasteload Allocations			Antidegradation Baseline			Antidegradation Allocations			Most Limiting Allocations		
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)
Selenium, Total Recoverable	0	2.0E+01	5.0E+00	1.7E+02	4.2E+03	1.0E+02	4.8E+01	3.0E+03	7.4E+04	5.0E+00	1.3E+00	1.7E+01	4.2E+02	4.2E+01	1.2E+01	3.0E+02
Silver	0	9.1E-01	-	-	-	4.8E+00	-	-	-	2.3E-01	-	-	-	1.9E+00	-	-
Sulfate	0	-	-	2.5E+05	-	-	-	4.4E+06	-	-	-	2.5E+04	-	-	-	4.4E+05
1,1,2,2-Tetrachloroethane ^c	0	-	-	1.7E+00	4.0E+01	-	-	7.6E+01	1.8E+03	-	-	1.7E-01	4.0E+00	-	-	7.6E+00
Tetrachloroethylene ^c	0	-	-	6.9E+00	3.3E+01	-	-	3.1E+02	1.5E+03	-	-	6.9E-01	3.3E+00	-	-	3.1E+01
Thallium	0	-	-	2.4E-01	4.7E-01	-	-	4.2E+00	8.3E+00	-	-	2.4E-02	4.7E-02	-	-	4.2E-01
Toluene	0	-	-	5.1E+02	6.0E+03	-	-	9.0E+03	1.1E+05	-	-	5.1E+01	6.0E+02	-	-	9.0E+02
Total dissolved solids	0	-	-	5.0E+05	-	-	-	8.8E+06	-	-	-	5.0E+04	-	-	-	8.8E+05
Toxaphene ^c	0	7.3E-01	2.0E-04	2.8E-03	2.8E-03	3.7E+00	1.9E-03	1.2E-01	1.2E-01	1.8E-01	5.0E-05	2.8E-04	2.8E-04	1.5E+00	4.8E-04	1.2E-02
Tributyltin	0	4.6E-01	7.2E-02	-	-	2.3E+00	6.9E-01	-	-	1.2E-01	1.8E-02	-	-	9.7E-01	1.7E-01	-
1,2,4-Trichlorobenzene	0	-	-	3.5E+01	7.0E+01	-	-	6.2E+02	1.2E+03	-	-	3.5E+00	7.0E+00	-	-	6.2E+01
1,1,2-Trichloroethane ^c	0	-	-	5.9E+00	1.6E+02	-	-	2.6E+02	7.1E+03	-	-	5.9E-01	1.6E+01	-	-	2.6E+01
Trichloroethylene ^c	0	-	-	2.5E+01	3.0E+02	-	-	1.1E+03	1.3E+04	-	-	2.5E+00	3.0E+01	-	-	1.1E+02
2,4,6-Trichlorophenol ^c	0	-	-	1.4E+01	2.4E+01	-	-	6.2E+02	1.1E+03	-	-	1.4E+00	2.4E+00	-	-	6.2E+01
propionic acid (Silver)	0	-	-	5.0E+01	-	-	-	8.8E+02	-	-	-	5.0E+00	-	-	-	8.8E+01
Vinyl Chloride ^c	0	-	-	2.5E-01	2.4E+01	-	-	1.1E+01	1.1E+03	-	-	2.5E-02	2.4E+00	-	-	1.1E+00
Zinc	0	6.1E+01	6.1E+01	7.4E+03	2.6E+04	3.1E+02	5.9E+02	1.3E+05	4.8E+05	1.5E+01	1.5E+01	7.4E+02	2.6E+03	1.3E+02	1.5E+02	1.3E+04

Notes:

- All concentrations expressed as micrograms/liter (ug/l), unless noted otherwise
- Discharge flow is highest monthly average or Form 2C maximum for Industries and design flow for Municipals
- Metals measured as Dissolved, unless specified otherwise
- "C" indicates a carcinogenic parameter
- Regular WLAs are mass balances (minus background concentration) using the % of stream flow entered above under Mixing Information.
Antidegradation WLAs are based upon a complete mix.
Antideg. Baseline = (0.25(WQC - background conc.) + background conc.) for acute and chronic
= (0.1(WQC - background conc.) + background conc.) for human health
- WLAs established at the following stream flows: 1Q10 for Acute, 30Q10 for Chronic Ammonia, 7Q10 for Other Chronic, 30Q5 for Non-carcinogens and Harmonic Mean for Carcinogens. To apply mixing ratios from a model set the stream flow equal to (mixing ratio - 1), effluent flow equal to 1 and 100% mix.

Metal	Target Value (SSTV)
Antimony	9.8E+00
Arsenic	1.8E+01
Barium	3.5E+03
Cadmium	8.9E-01
Chromium III	5.6E+01
Chromium VI	1.3E+01
Copper	5.1E+00
Iron	5.3E+02
Lead	7.2E+00
Manganese	8.8E+01
Mercury	1.1E+00
Nickel	1.5E+01
Selenium	7.2E+00
Silver	7.6E-01
Zinc	5.1E+01

Note: do not use QL's lower than the minimum QL's provided in agency guidance

0.035 MGD DISCHARGE FLOW - STREAM MIX PER "Mix.exe"

Discharge Flow Used for WQS-WLA Calculations (MG) 0.035

Stream Flows
Allocated to Mix (MGD) Stream + Discharge (MGD)

Dry Season	Wet Season	Dry Season	Wet Season
1Q10 0.142	0.850	0.177	0.885
7Q10 0.300	N/A	0.335	N/A
30Q10 0.420	1.280	0.455	1.315
30Q5 0.580	N/A	0.615	N/A
Harm. Mean 1.520	N/A	1.555	N/A
Annual Avg. 0.000	N/A	0.035	N/A

Stream/Discharge Mix Values

Dry Season	Wet Season
1Q10 90th% Temp. Mix (deg C) 23.000	18.000
30Q10 90th% Temp. Mix (deg C) 23.000	18.000
1Q10 90th% pH Mix (SU) 7.745	7.864
30Q10 90th% pH Mix (SU) 7.833	7.876
1Q10 10th% pH Mix (SU) 6.682	N/A
7Q10 10th% pH Mix (SU) 6.855	N/A

Calculated Formula Inputs
1Q10 Hardness (mg/L as CaCO3) 46.0
7Q10 Hardness (mg/L as CaCO3) 46.0

Ammonia - Dry Season - Acute

90th Percentile pH (SU) 7.745
(7.204 - pH) -0.541
(pH - 7.204) 0.541
Trout Present Criterion (mg N/L) 8.923
Trout Absent Criterion (mg N/L) 13.361
Trout Present? n
Effective Criterion (mg N/L) 13.361

Ammonia - Dry Season - Chronic

90th Percentile Temp. (deg C) 23.000
90th Percentile pH (SU) 7.833
MIN 1.650
MAX 23.000
(7.688 - pH) -0.145
(pH - 7.688) 0.145
Early LS Present Criterion (mg N) 1.767
Early LS Absent Criterion (mg N) 1.767
Early Life Stages Present? y
Effective Criterion (mg N/L) 1.767

Ammonia - Wet Season - Acute

90th Percentile pH (SU) 7.864
(7.204 - pH) -0.660
(pH - 7.204) 0.660
Trout Present Criterion (mg N/L) 7.222
Trout Absent Criterion (mg N/L) 10.813
Trout Present? n
Effective Criterion (mg N/L) 10.813

Ammonia - Wet Season - Chronic

90th Percentile Temp. (deg C) 18.000
90th Percentile pH (SU) 7.876
MIN 2.277
MAX 18.000
(7.688 - pH) -0.188
(pH - 7.688) 0.188
Early LS Present Criterion (mg N) 2.309
Early LS Absent Criterion (mg N) 2.309
Early Life Stages Present? y
Effective Criterion (mg N/L) 2.309

0.035 MGD DISCHARGE FLOW - COMPLETE STREAM MIX

Discharge Flow Used for WQS-WLA Calculations (MG) 0.035

Stream Flows
Allocated to Mix (MGD) Stream + Discharge (MGD)

Dry Season	Wet Season	Dry Season	Wet Season
1Q10 0.260	0.850	0.295	0.885
7Q10 0.300	N/A	0.335	N/A
30Q10 0.420	1.280	0.455	1.315
30Q5 0.580	N/A	0.615	N/A
Harm. Mean 1.520	N/A	1.555	N/A
Annual Avg. 0.000	N/A	0.035	N/A

Stream/Discharge Mix Values

Dry Season	Wet Season
1Q10 90th% Temp. Mix (deg C) 23.000	18.000
30Q10 90th% Temp. Mix (deg C) 23.000	18.000
1Q10 90th% pH Mix (SU) 7.801	7.864
30Q10 90th% pH Mix (SU) 7.833	7.876
1Q10 10th% pH Mix (SU) 6.824	N/A
7Q10 10th% pH Mix (SU) 6.855	N/A

Calculated Formula Inputs
1Q10 Hardness (mg/L as CaCO3) = 46.000
7Q10 Hardness (mg/L as CaCO3) = 46.000

Ammonia - Dry Season - Acute

90th Percentile pH (SU) 7.801
(7.204 - pH) -0.597
(pH - 7.204) 0.597
Trout Present Criterion (mg N/L) 8.095
Trout Absent Criterion (mg N/L) 12.121
Trout Present? n
Effective Criterion (mg N/L) 12.121

Ammonia - Dry Season - Chronic

90th Percentile Temp. (deg C) 23.000
90th Percentile pH (SU) 7.833
MIN 1.650
MAX 23.000
(7.688 - pH) -0.145
(pH - 7.688) 0.145
Early LS Present Criterion (mg N) 1.767
Early LS Absent Criterion (mg N) 1.767
Early Life Stages Present? y
Effective Criterion (mg N/L) 1.767

Ammonia - Wet Season - Acute

90th Percentile pH (SU) 7.864
(7.204 - pH) -0.660
(pH - 7.204) 0.660
Trout Present Criterion (mg N/L) 7.222
Trout Absent Criterion (mg N/L) 10.813
Trout Present? n
Effective Criterion (mg N/L) 10.813

Ammonia - Wet Season - Chronic

90th Percentile Temp. (deg C) 18.000
90th Percentile pH (SU) 7.876
MIN 2.277
MAX 18.000
(7.688 - pH) -0.188
(pH - 7.688) 0.188
Early LS Present Criterion (mg N) 2.309
Early LS Absent Criterion (mg N) 2.309
Early Life Stages Present? y
Effective Criterion (mg N/L) 2.309

4/27/2010 8:03:23 AM

Facility = Bennie's MHP STP

Chemical = TRC (ug/L)

Chronic averaging period = 4

WLAa = 40

WLAc = 26

Q.L. = 100

samples/mo. = 30

samples/wk. = 8

Summary of Statistics:

observations = 1

Expected Value = 1000

Variance = 360000

C.V. = 0.6

97th percentile daily values = 2433.41

97th percentile 4 day average = 1663.79

97th percentile 30 day average = 1206.05

< Q.L. = 0

Model used = BPJ Assumptions, type 2 data

A limit is needed based on Chronic Toxicity

Maximum Daily Limit = 38.026944385384

Average Weekly limit = 22.6832657272025

Average Monthly Limit = 18.8469584346155

The data are:

1000

4/27/2010 8:06:33 AM

Facility = Bennie's MHP STP

Chemical = ammonia as N (mg/L) Jan. - May

Chronic averaging period = 30

WLAa = 68

WLAc = 22

Q.L. = 0.2

samples/mo. = 1

samples/wk. = 1

Summary of Statistics:

observations = 1

Expected Value = 9

Variance = 29.16

C.V. = 0.6

97th percentile daily values = 21.9007

97th percentile 4 day average = 14.9741

97th percentile 30 day average = 10.8544

< Q.L. = 0

Model used = BPJ Assumptions, type 2 data

No Limit is required for this material

The data are:

4/27/2010 8:02:11 AM

Facility = Bennie's MHP STP

Chemical = ammonia as N (mg/L) (June - Dec.)

Chronic averaging period = 30

WLAa = 26

WLAc = 5.7

Q.L. = 0.2

samples/mo. = 1

samples/wk. = 1

Summary of Statistics:

observations = 1

Expected Value = 9

Variance = 29.16

C.V. = 0.6

97th percentile daily values = 21.9007

97th percentile 4 day average = 14.9741

97th percentile 30 day average = 10.8544

< Q.L. = 0

Model used = BPJ Assumptions, type 2 data

A limit is needed based on Chronic Toxicity

Maximum Daily Limit = 11.500719532473

Average Weekly limit = 11.500719532473

Average Monthly Limit = 11.500719532473

The data are:

Attachment H

Justification for Reduced Monitoring Memorandum

MEMORANDUM

DEPARTMENT OF ENVIRONMENTAL QUALITY *Blue Ridge Regional Office*

3019 Peters Creek Road

Roanoke, VA 24019

SUBJECT: Justification for Reduced Monitoring Frequency
Reissuance of VPDES Permit No. VA0061042
Bennie's Mobile Home Park STP

TO: Permit File

FROM: Becky L. France, Environmental Engineer Senior *BLF*

DATE: March 26, 2010

Compliance History

The VPDES Permit Manual recommends effluent monitoring frequencies. In the previous permit term, the treatment facility qualified for reduced monitoring frequencies. Guidance Memorandum 98-2005 allows for reduced monitoring at facilities with excellent compliance histories. During the 2005 to 2010 permit term the facility permit contained reduced monitoring frequencies TSS and BOD₅. For this reissuance, the eligibility for continued reduced monitoring has been reevaluated.

To qualify for consideration of reduced monitoring, the facility should not have been issued any Letter of Noncompliance (LON), Notice of Violation (NOV), Warning Letter, or Notice of Unsatisfactory Laboratory Evaluations, or be under any Consent Orders, Consent Decrees, Executive Compliance Agreements, or related enforcement documents during the past three years.

Bennie's Mobile Home Park STP was issued a Warning Letter (No. W2009-06-L-1008) for failure to submit a complete Operations and Maintenance (O&M) Manual. This Warning Letter was rescinded because it was sent in error. The O&M Manual was submitted on February 14, 2006 and approved on March 5, 2009. No other Warning Letters or enforcement documents were found in the DEQ correspondence file. Therefore, the facility qualifies for reduced monitoring.

Monitoring Data Evaluation

Discharge Monitoring Report (DMR) data from August 2005 through December 2009, were reviewed and tabulated in the attached tables. Dissolved oxygen, total suspended solids (TSS), pH and biochemical oxygen demand (BOD₅) have been considered for reduced monitoring. Total residual chlorine limits are not considered eligible for reduced monitoring to ensure protection of aquatic life and human health. The actual performance to permit limit ratios are summarized in the table that follows. Facilities with baseline monitoring that have an actual performance to permit limit ratio of greater than 75 percent are not eligible for reduced monitoring.

Table 1 **Performance to Permit Limit Ratios (DMR Data)**

Parameter	Actual Performance/ Permit Limit Monthly Average*	Actual Performance/ Permit Limit (Maximum)*	Reduced Monitoring
TSS	20.30%, 3.68%	13.53%, 2.45%	1/ 6 Months
BOD ₅	18.74%, 0.61%	12.49%, 0.40%	1/ 6 Months

*The ratio based upon concentration is listed first, and the ratio based upon loading is listed second.

Dissolved Oxygen: Many of the reported values were within 0.5 mg/L of the limit. So, dissolved oxygen does not qualify for a reduction in monitoring frequency. Dissolved oxygen will continue to be monitored 1/day.

pH: Many of the reported values were within 0.5 S.U. of the limit. So, pH does not qualify for a reduction in monitoring frequency. Monitoring for pH will continue to be 1/day via grab samples.

Total Suspended Solids (TSS) and BOD₅: The DMR data are consistently well below the permit limits. According to Guidance Memorandum 98-2005, facilities with monthly baseline monitoring that have an actual performance to permit limit ratio of less than 25 percent are eligible for a reduced monitoring frequency of 1/ 6 months. The monitoring frequency for BOD₅ and TSS has been further reduced from 1/ 3 months during the previous permit term to 1/ 6 months.

The permit will contain a special condition that will revert the TSS and BOD₅ monitoring frequencies back to 1/month if a Notice of Violation is issued for any of the parameters with reduced monitoring. The permittee is still expected to take all appropriate measures to control both the average and maximum concentration of the pollutants of concern, regardless of any reductions in monitoring frequencies.

Justification Memorandum for Reduced Monitoring

VPDES Permit No. VA0061042

Page 3 of 5

Table 2 **DMR Data for Bennie's MHP STP**

Month	TSS				BOD ₅			
	average kg/d	max kg/d	average mg/L	max mg/L	average kg/d	max kg/d	average mg/L	max mg/L
10-Sep-05	0.25	0.25	13	13	0.18	0.18	9	9
10-Oct-05	0.15	0.15	8	8	0.11	0.11	6	6
10-Jan-06	0.19	0.19	10	10	0.19	0.19	10	10
10-Apr-06	0.09	0.09	5	5	0.15	0.15	8	8
10-Jul-06	0.21	0.21	11	11	<.02	<.02	<1	<1
10-Oct-06	0.27	0.27	14	14	0.16	0.16	8	8
10-Jan-07	0.16	0.16	8	8	0.14	0.14	7	7
10-Apr-07	0.076	0.076	4	4	0.038	0.038	2	2
10-Jul-07	0.11	0.11	6	6	0.11	0.11	5	5
10-Oct-07	0.06	0.06	3	3	0.08	0.08	2	2
10-Jan-08	0.06	0.06	3	3	0.09	0.09	5	5
10-Apr-08	0.06	0.06	2	2	0.14	0.14	5	5
10-Jul-08	0.19	0.19	7	7	0.38	0.38	14	14
10-Oct-08	0.14	0.14	5.2	5.2	0.16	0.16	6	6
10-Jan-09	0.09	0.09	5	5	0.02	0.02	1	1
10-Apr-09	0.06	0.06	3.1	3.1	0.13	0.13	7	7
10-Jul-09	0.005	0.005	2.5	2.5	0.005	0.005	2.5	2.5
10-Oct-09	<QL	<QL	<QL	<QL	<QL	<QL	<QL	<QL
10-Jan-10	0.625	0.625	5.9	5.9	0.392	0.392	3.7	3.7
mean	0.15	0.15	6.1	6.1	0.14	0.14	5.6	5.6
minimum	0.005	0.005	2.0	2.0	<0.02	<0.02	<1	<1
permit limit	4.0	6.0	30	45	22.7	34.0	30	45
performance / permit limit) 100	3.68	2.45	20.30	13.53	0.61	0.40	18.74	12.49

pH Data

Date DMR Due	pH, min S.U.	H ion conc	pH, max S.U.	H ion conc
10-Apr-07	6.1	7.943E-07	6.7	1.995E-07
10-May-07	6.2	6.310E-07	6.7	1.995E-07
10-Jun-07	6.2	6.310E-07	6.9	1.259E-07
10-Jul-07	6.2	6.310E-07	6.9	1.259E-07
10-Aug-07	6.3	5.012E-07	6.8	1.585E-07
10-Sep-07	6.1	7.943E-07	7.4	3.981E-08
10-Oct-07	6.4	3.981E-07	7.4	3.981E-08
10-Nov-07	6.6	2.512E-07	7.3	5.012E-08
10-Dec-07	6.6	2.512E-07	7.1	7.943E-08
10-Jan-08	6.3	5.012E-07	7.5	3.162E-08
10-Feb-08	6.9	1.259E-07	7.7	1.995E-08
10-Mar-08	6.6	2.512E-07	7.7	1.995E-08
10-Apr-08	6.5	3.162E-07	7.4	3.981E-08
10-May-08	6.2	6.310E-07	7.1	7.943E-08
10-Jun-08	6.7	1.995E-07	7.2	6.310E-08
10-Jul-08	6.7	1.995E-07	7.2	6.310E-08
10-Aug-08	6.5	3.162E-07	7.4	3.981E-08
10-Sep-08	6.5	3.162E-07	7.3	5.012E-08
10-Oct-08	6.2	6.310E-07	7.4	3.981E-08
10-Nov-08	6.2	6.310E-07	7.1	7.943E-08
10-Dec-08	6.3	5.012E-07	7.2	6.310E-08
10-Jan-09	6.9	1.259E-07	7.4	3.981E-08
10-Feb-09	6	1.000E-06	7.3	5.012E-08
10-Mar-09	6.2	6.310E-07	7.1	7.943E-08
10-Apr-09	6.7	1.995E-07	7.4	3.981E-08
10-May-09	6.5	3.162E-07	7.4	3.981E-08
10-Jun-09	6.5	3.162E-07	7.2	6.310E-08
10-Jul-09	6.8	1.585E-07	7.3	5.012E-08
10-Aug-09	6.5	3.162E-07	7.2	6.310E-08
10-Sep-09	6.6	2.512E-07	7.2	6.310E-08
10-Oct-09	6.6	2.512E-07	7.3	5.012E-08
10-Nov-09	6.5	3.162E-07	7.4	3.981E-08
10-Dec-09	6.6	2.512E-07	7.5	3.162E-08
10-Jan-10	6.5	3.162E-07	7.8	1.585E-08
10-Feb-10	6.8	1.585E-07	7.5	3.162E-08
10-Mar-10	6.8	1.585E-07	7	1.000E-07
mean	6.4	3.964E-07	7.2	6.570E-08
maximum			7.8	
minimum	6.0			
permit limit	6.0	1.000E-06	9.0	1.000E-09

Date DMR Due	DO (mg/L)
	minimum
10-Apr-07	6
10-May-07	6
10-Jun-07	6.1
10-Jul-07	6
10-Aug-07	6
10-Sep-07	6
10-Oct-07	6
10-Nov-07	6
10-Dec-07	6.8
10-Jan-08	6.2
10-Feb-08	7.5
10-Mar-08	6.5
10-Apr-08	6.9
10-May-08	6
10-Jun-08	6
10-Jul-08	6
10-Aug-08	6
10-Sep-08	6
10-Oct-08	6
10-Nov-08	6.2
10-Dec-08	6.4
10-Jan-09	6
10-Feb-09	6
10-Mar-09	8.4
10-Apr-09	6
10-May-09	6
10-Jun-09	6
10-Jul-09	6
10-Aug-09	6
10-Sep-09	6
10-Oct-09	6
10-Nov-09	6
10-Dec-09	6
10-Jan-10	6
10-Feb-10	6.1
10-Mar-10	7.6
mean	6.2
maximum	8.4
minimum	6
permit limit	6

Attachment I

Regional Water Quality Model Output (Version 4.0)

MEMORANDUM

DEPARTMENT OF ENVIRONMENTAL QUALITY
South Central Regional Office - Water Planning
7705 Timberlake Road Lynchburg, VA 24502 434/582-5120

SUBJECT: Flow Frequency Determination & Stream Sanitation Analysis
Bennies Mobile Home Park STP - #VA0061042

TO: Becky France

FROM: Amanda Gray *ag*

DATE: December 3, 2009

COPIES: File

A complete request for a stream sanitation analysis for Bennies MHP STP was received on November 16, 2009. The facility is currently permitted at 0.035 MGD with secondary treatment limits. The analysis was run to determine if these limitations are protective of water quality standards.

Amanda Gray and Paula Nash performed a site visit on November 30, 2009 and observed current conditions and the current outfall location. A flow frequency analysis was completed to determine the 1Q10, 7Q10, 30Q5, 30Q10, HF1Q10, HF7Q10, HF30Q10 and Harmonic Mean at the discharge point. Using a drainage area proportion, the 7Q10 calculated at the discharge point is 0.303 MGD.

The first model segment is approximately 2.03 miles and the upstream and downstream elevations are 640 ft. and 585 ft. respectively. The discharge enters Opossum Creek at river mile 4.83.

The receiving stream was modeled using DEQ's Regional 4.0 model. A CBOD5 of 25 mg/L, TKN of 20 mg/L and DO of 6.0 mg/L using a 7Q10 of 0.00 MGD and the 90th percentile temperature value of 24°C were used. These limits roughly equate to the current secondary treatment limits in the permit.

The model predicted that the discharge will have no significant impact on Opossum Creek under 7Q10 conditions with the current limits. If you have any questions or need any additional information, please do not hesitate to contact me.

***Planning Statement for VPDES Permit Application Processing
DEO-SCRO***

VPDES	OwnerName	Facility	County
VA0061042	Bennies MHP STP	Bennies MHP STP	Campbell

Outfall #: 001

River Basin: James River (Middle)

Receiving Stream: Opossum Creek

Subbasin: James River

Watershed Code: H05R

River Mile: 4.83

	MGD		MGD
1Q10	0.26	HF 1Q10	0.847
7Q10	0.303	HF7Q10	0.961
30Q5	0.582	HF30Q10	1.284
30Q10	0.422	HM	1.522

Modeling Notes

Current limits are protective of WQ Standards and the Anti-degradation policy.

WQMP Name No Plan

Statement

TMDL ID None

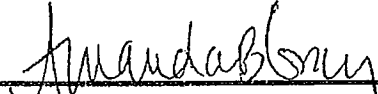
Impairment Cause

TMDL Due Date

Completed TMDL Information

James River WS Bacteria TMDL.

TMDL Approval Dates 12/4/2007, modified 12-3-2009


 Amanda B. Gray, Water Planning Engineer or
 Paula Nash, TMDL Coordinator

12/4/09
 Date

REGIONAL MODELING SYSTEM VERSION 4.0
Model Input File for the Discharge
to OPOSSUM CREEK.

File Information

File Name: C:\Documents and Settings\abgray\Desktop\VA0061042\VA0061042.mo
Date Modified: December 02, 2009

Water Quality Standards Information

Stream Name: OPOSSUM CREEK
River Basin: James River Basin
Section: 11e
Class: III - Nontidal Waters (Coastal and Piedmont)
Special Standards: None

Background Flow Information

Gauge Used: Beaver Creek #02025900
Gauge Drainage Area: 24 Sq.Mi.
Gauge 7Q10 Flow: 1.21 MGD
Headwater Drainage Area: 5.99 Sq.Mi.
Headwater 7Q10 Flow: 0.3019958 MGD (Net; includes Withdrawals/Discharges)
Withdrawal/Discharges: 0 MGD
Incremental Flow in Segments: 5.041667E-02 MGD/Sq.Mi.

Background Water Quality

Background Temperature: 24 Degrees C.
Background cBOD5: 2 mg/l
Background TKN: 0 mg/l
Background D.O.: 7.455607 mg/l

Model Segmentation

Number of Segments: 1
Model Start Elevation: 640 ft above MSL
Model End Elevation: 585 ft above MSL

REGIONAL MODELING SYSTEM VERSION 4.0
Model Input File for the Discharge
to OPOSSUM CREEK.

File Information

File Name: C:\Documents and Settings\labgray\Desktop\VA0061042\VA0061042.mo
Date Modified: December 02, 2009

Water Quality Standards Information

Stream Name: OPOSSUM CREEK
River Basin: James River Basin
Section: 11e
Class: III - Nontidal Waters (Coastal and Piedmont)
Special Standards: None

Background Flow Information

Gauge Used: Beaver Creek #02025900
Gauge Drainage Area: 24 Sq.Mi.
Gauge 7Q10 Flow: 1.21 MGD
Headwater Drainage Area: 5.99 Sq.Mi.
Headwater 7Q10 Flow: 0.3019958 MGD (Net; includes Withdrawals/Discharges)
Withdrawal/Discharges: 0 MGD
Incremental Flow in Segments: 5.041667E-02 MGD/Sq.Mi.

Background Water Quality

Background Temperature: 24 Degrees C
Background cBOD5: 2 mg/l
Background TKN: 0 mg/l
Background D.O.: 7.455607 mg/l

Model Segmentation

Number of Segments: 1
Model Start Elevation: 640 ft above MSL
Model End Elevation: 585 ft above MSL

REGIONAL MODELING SYSTEM VERSION 4.0
Model Input File for the Discharge
to OPOSSUM CREEK.

Segment Information for Segment 1

Definition Information

Segment Definition:	A discharge enters.
Discharge Name:	BENNIES MHP STP
VPDES Permit No.:	VA0061042

Discharger Flow Information

Flow:	0.035 MGD
cBOD5:	25 mg/l
TKN:	20 mg/l
D.O.:	6 mg/l
Temperature:	24 Degrees C

Geographic Information

Segment Length:	2.03 miles
Upstream Drainage Area:	5.99 Sq.Mi.
Downstream Drainage Area:	0 Sq.Mi.
Upstream Elevation:	640 Ft.
Downstream Elevation:	585 Ft.

Hydraulic Information

Segment Width:	15 Ft.
Segment Depth:	0.151 Ft.
Segment Velocity:	0.23 Ft./Sec.
Segment Flow:	0.337 MGD
Incremental Flow:	-0.302 MGD (Applied at end of segment.)

Channel Information

Cross Section:	Rectangular
Character:	Moderately Meandering
Pool and Riffle:	No
Bottom Type:	Small Rock
Sludge:	None
Plants:	None
Algae:	None

"Model Run For C:\Documents and Settings\abgray\Desktop\VA0061042\VA0061042.mod On 12/3/2009 8:16:19 AM"

"Model is for OPOSSUM CREEK."

"Model starts at the BENNIES MHP STP discharge."

"Background Data"

"7Q10"	"CBOD5"	"TKN"	"DO"	"Temp"
"(mgd)"	"(mg/l)"	"(mg/l)"	"(mg/l)"	"deg C"
.302,	2,	0,	7.456,	24

"Discharge/Tributary Input Data for Segment 1"

"Flow"	"CBOD5"	"TKN"	"DO"	"Temp"
"(mgd)"	"(mg/l)"	"(mg/l)"	"(mg/l)"	"deg C"
.035,	25,	20,	.6,	24

"Hydraulic Information for Segment 1"

"Length"	"width"	"Depth"	"Velocity"
"(mi)"	"(ft)"	"(ft)"	"(ft/sec)"
2.03,	15,	.151,	.23

"Initial Mix Values for Segment 1"

"Flow"	"DO"	"CBOD"	"nBOD"	"DOSat"	"Temp"
"(mgd)"	"(mg/l)"	"(mg/l)"	"(mg/l)"	"(mg/l)"	"deg C"
.337,	7.304,	10.972,	7.645,	8.292,	24

"Rate Constants for Segment 1. - (All units Per Day)"

"k1"	"k1@T"	"k2"	"k2@T"	"kn"	"kn@T"	"BD"	"BD@T"
1.2,	1.442,	16.256,	17.874,	.5,	.68,	0,	0

"Output for Segment 1"

"Segment starts at BENNIES MHP STP"

"Total"	"Segm."	"Dist."	"Dist."	"DO"	"CBOD"	"nBOD"
"(mi)"	"(mi)"	"(mi)"	"(mi)"	"(mg/l)"	"(mg/l)"	"(mg/l)"
0,	0,	0,	0,	7.304,	10.972,	7.645
.1,	.1,	.1,	.1,	7.241,	10.56,	7.508
.2,	.2,	.2,	.2,	7.216,	10.163,	7.374
.3,	.3,	.3,	.3,	7.214,	9.781,	7.242
.4,	.4,	.4,	.4,	7.226,	9.413,	7.112
.5,	.5,	.5,	.5,	7.246,	9.059,	6.985
.6,	.6,	.6,	.6,	7.271,	8.718,	6.86
.7,	.7,	.7,	.7,	7.299,	8.39,	6.737
.8,	.8,	.8,	.8,	7.328,	8.075,	6.616
.9,	.9,	.9,	.9,	7.357,	7.771,	6.497
1,	1,	1,	1,	7.386,	7.479,	6.381
1.1,	1.1,	1.1,	1.1,	7.414,	7.198,	6.267
1.2,	1.2,	1.2,	1.2,	7.442,	6.927,	6.155
1.3,	1.3,	1.3,	1.3,	7.463,	6.667,	6.045
1.4,	1.4,	1.4,	1.4,	7.463,	6.416,	5.937
1.5,	1.5,	1.5,	1.5,	7.463,	6.175,	5.831
1.6,	1.6,	1.6,	1.6,	7.463,	5.943,	5.727
1.7,	1.7,	1.7,	1.7,	7.463,	5.72,	5.624
1.8,	1.8,	1.8,	1.8,	7.463,	5.505,	5.523
1.9,	1.9,	1.9,	1.9,	7.463,	5.298,	5.424
2,	2,	2,	2,	7.463,	5.099,	5.327
2.03,	2.03,	2.03,	2.03,	7.463,	5.041,	5.298

"END OF FILE"

Attachment J

Financial Assurance

- **State Commerce Commission
Certificate**
- **Closure Plan**
- **Financial Assurance Annual Cost
Adjustment Approval**

Commonwealth of Virginia



STATE CORPORATION COMMISSION

Richmond, September 26, 2002

This is to certify that the certificate of organization of

BRI PROPERTIES LLC

was this day issued and admitted to record in this office and that the said limited liability company is authorized to transact its business subject to all Virginia laws applicable to the company and its business. Effective date: September 26, 2002

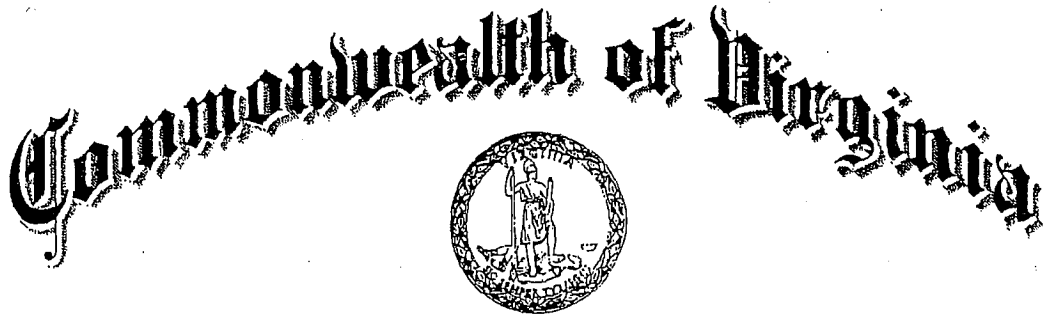


State Corporation Commission

Attest:

Joel H. Beck

Clerk of the Commission



STATE CORPORATION COMMISSION

Richmond, February 6, 1981

This is to Certify that the certificate of incorporation of
Bennie's Rentals, Inc.

*was this day issued and admitted to record in this office
and that the said corporation is authorized to transact its
business subject to all the laws of the State applicable to
the corporation and its business.*

State Corporation Commission

William E. G...
Clerk of the Commission



COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

W. Tayloe Murphy, Jr.
Secretary of Natural Resources

West Central Regional Office
3019 Peters Creek Road, Roanoke, Virginia 24019
Telephone (540) 562-6700, Fax (540) 562-6725
www.deq.virginia.gov

Robert G. Burnley
Director

Steven A. Dietrich
Regional Director

March 2, 2005

COUNTY: Campbell County
Receiving Facility – Bennie's MHP STP
Project: Closure Plan

Mr. Bruce Bunnell
Bennie's Rentals, Inc.
6080 Campbell Hwy.
Lynchburg, VA 24501

Dear Mr. Bunnell:

This Department has received a closure plan for Bennie's Mobile Home Park sewage treatment works in Campbell County. The plan is entitled "Closure Plan - Bennies Mobile Home Park STP - VPDES Permit #VA0061042" and is in a report format. The plan is dated January 18, 2005, but revisions were received on March 1, 2005. The closure plan was submitted to comply with the financial assurance requirements of 9 VAC 25-650-10 et seq as they apply to VPDES permit VA0061042.

The following summarizes the plan. A Closure Plan Manager has been identified. The Closure Plan Manager will carry out the details of the plan. All park residents will be given 60 days notice to vacate the park. As residents move out, the influent sewer pipe connections will be plugged. The contents of the septic tanks onsite will be pump and hauled to the Lynchburg sewage treatment works as the tanks are taken offline. Wastewater will be processed through the sewage treatment plant in accordance with the VPDES permit. Once the cessation of sewage to the treatment works is verified, the mechanical and electrical components will be salvaged or disposed of properly. All wastewater and sludge will be pumped from the treatment units and the lagoons and conveyed to the Lynchburg sewage treatment works. The lagoons will be graded to shed water. The area will be graded, seeded, and mulched. If any sludge remains in the lagoon, the sludge will be limed and will be allowed to air dry prior to backfilling. The lagoon area will be capped with a slowly permeable material if sludge remains.

The review of the plan has been confined to technical requirements and design criteria as stipulated in the Commonwealth of Virginia's *Sewage Collection and Treatment Regulations*.

RECEIVED

Mr. Bunnell
Page two

MAR 03 2005

DEQ SCRO

COUNTY: Campbell County
Receiving Facility – Bennies MHP STP
Project: Closure Plan

In accordance with the Virginia Water Control Law, *Code of Virginia* 1950, as amended, Title 62.1, Section 62.1-44.19, this letter report is to advise that the previously mentioned closure plan is technically adequate and is hereby approved. Please work with the South Central Regional DEQ office to complete the financial assurance requirements as required by 9 VAC 25-650-10 et seq.

One copy of the previously described closure plan with an Office of Wastewater Engineering approval sticker is enclosed.

By direction of the Director, Department of Environmental Quality.

Sincerely,



Marcia J. Degen, Ph.D., P.E.
Area Engineer
Office of Wastewater Engineering

Enclosure

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DEQ – Office of Wastewater Engineering - Richmond

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**Closure Plan
Bennies Mobile Home Park STP
VPDES Permit #VA0061042**

Prepared For:

Department of Environmental Quality
7705 Timberlake Rd.
Lynchburg, VA 24502

Prepared By:

Bruce Bunnell
Bennie's Rentals, Inc.
6080 Campbell Hwy.
Lynchburg, VA 24501
434-846-5642

January 18, 2005

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Closure Plan

Bennies Mobile Home Park STP

VPDES Permit No. VA0061042

January 18, 2005

1.0 INTRODUCTION

This Closure Plan details the closure activities for the Bennies Mobile Home Park Sewage Treatment Plant, hereafter referred to as Bennies MHPSTP. The Bennies MHPSTP is a privately owned sewage treatment plant operated by Bennie's Rentals, Inc. The plant currently serves the tenants of mobile homes within 501 Mobile Home Park, Sunnyside MHP, Pine Lane MHP, and single family dwellings at 534 and 552 Old Rustburg Rd. and 2451 Lone Jack Rd. The mobile home parks and the single family dwellings are residential rental properties managed by Bennie's Rentals, Inc. There are no industrial users contributing to the facility.

The Bennies MHPSTP only treats the effluent which is discharged from septic tanks. Each of the single family homes are connected to individual 1000 gallon septic tanks. Mobile homes within 501 MHP are connected to three 5000 gallon tanks. Mobile homes within Sunnyside MHP are connected to individual 1000 gallon tanks. In Pine Lane MHP some of the mobile homes have individual 1000 gallon tanks and some share a tank with another mobile home.

The Bennies MHPSTP consists of a rotating biological contactor (RBC) followed by a polishing pond, chlorination, post-aeration and dechlorination. The final treated effluent is discharged to Opossum Creek.

Sludge generated from the RBC is pumped to a holding tank. The holding tank is pumped about once each year. Septage from the septic tanks is pumped about once every three years. Both the sludge and the septage are hauled to another VPDES permitted facility for further treatment and final disposal. In addition, partially treated wastewater is occasionally pumped from the polishing and/or emergency overflow pond and hauled to Lynchburg Regional WWTP for further treatment and final disposal.

This Closure Plan will focus on the process of closing the Bennies MHPSTP in the event it is abandoned by the owners and ceases operation.

This Closure Plan meets the requirements of the Virginia Department of Environmental Quality Closure Plan and Financial Assurance Requirements of Privately Owned Sewerage systems consistent with 9 VAC25-650-60.

Bennies MHPSTP will retain a copy of the Closure Plan during closure and post-closure activities. The Closure Plan is available for review by the public at the office of Bennies Rentals, Inc.

1.1 Sewage Treatment Plant Location

Bennies MHPSTP is located approximately 2 miles south of Lynchburg, Virginia in Campbell County. The plant is managed by Bennie's Rentals, Inc. at 6080 Campbell Hwy.(U.S. 501) The plant is located on Sierra Way, approximately 1/10th of a mile behind the rental office.

1.2 Current Conditions

Bennies Mobile Home Park STP is currently operating under VPDES Permit No. VA0061042.

2.0 CLOSURE ACTIVITIES

When it has been determined by the State Water Control Board that the normal operation of the Bennies MHPSTP "ceases operations", as defined in VAC 25-650-10 et seq. "Closure Plans and Demonstration of Financial Capability"; the approved closure plan shall be implemented. The State Water Control Board will notify the third party under contractual agreement in Attachment A to begin implementation of the Closure Plan. For the remainder of this document this third party will be referred to as the Closure Plan Manager.

2.1 Closure Plan Time Frame and Assumptions

It shall be assumed that actual closure of the facility will be delayed for up to four months once the Closure Plan Manager has been notified. The delay is needed to allow tenants of the mobile home parks and houses to find new housing. It will then take up to two months for all remaining closure activities to be implemented.

For the purpose of this Plan it is assumed that during the 4 month delay before closure begins, there will be no major maintenance requirements of the Bennies MHPSTP.

2.2 Contract a Qualified Permitted Operator

The first step for the Closure Plan Manager is to secure a contract with a Qualified Permitted Operator to continue the required daily operation and monitoring of the

Bennies MHPSTP. The Qualified Permitted Operator would also be required to file all necessary reports with the DEQ. Note that the Closure Plan Manager may also be a Qualified Permitted Operator. The services of the Qualified Permitted Operator would be required during the initial 4 month period of Closure Activities. Daily operation of the Bennies MHPSTP would be required until all sewage connections feeding the plant have been cut and sealed shut and all flow into the plant has stopped.

2.3 Eviction of Tenants

The second step for the Closure Plan Manager is to issue notices to terminate rental agreements with all tenants of mobile homes and houses which discharge sewage to the Bennies MHPSTP. Currently the Code of Virginia 55-248.46 requires that a minimum of sixty days advance notice must be given.

2.4 Sealing of Sewage Connections and Removal of Sludge

Once the Closure Plan Manager has determined that a tenant has vacated a mobile home space or house then the sewage connection shall be cut and sealed. If that particular space or house is on a single 1000 gallon tank then the sludge from that tank shall be pumped and hauled to the Lynchburg Sewage Treatment Plant. Once all connections served by a 5000 gallon tank have been cut and sealed then sludge from that tank shall be pumped and hauled. Once all septic tanks have been pumped the Qualified Permitted Operator shall verify that all in-flow into the plant has ceased. If it has ceased, then the final closure procedures shall be implemented.

2.5 Hiring of Contractor

During the interim 4 month period prior to actual closure, the Closure Plan Manager shall select a Contractor to be responsible for sealing inflow and discharge points, disassembly and removal of plant components, filling and grading of lagoons and other plant areas, erosion and sedimentation control.

2.6 Hiring of Engineer for Certification

Also during the interim 4 month period, the Closure Plan Manager shall select a professional engineer who's responsibility is to verify the adequacy of the closure. During the closure process and upon completion of the closure plan, the Closure Plan Manager will have a professional engineer certify that the Closure Plan was implemented fully and consistent with applicable regulations. These certifications will be submitted to the DEQ.

2.7 Pumping of Lagoons and Sludge Holding Tank

Once all sewage connections have been cut and sealed the Closure Plan Manager shall instruct the Qualified Plant Operator to continue to treat and discharge effluent from the lagoons as long as it is done within compliance of the VPDES permit. The Qualified

Plant Operator will instruct the Closure Plan Manager when it is time to begin closing the Bennies MHPSTP.

At that time the Closure Plan Manager shall have the 5000 gallon sludge holding tank, located at the entrance to the Bennies MHPSTP, pumped and hauled to the Lynchburg Sewage Treatment Plant.

The remaining effluent and sludge in the two lagoons at the Bennies MHPSTP shall also be pumped and hauled to the Lynchburg Sewage Treatment Plant. The lagoons shall remain in place for approximately thirty days or until the remaining sludge has dried sufficiently. The Contractor shall lime the surface of each lagoon with approximately 150 pounds of ground agricultural lime per 1000 S.F.

2.8 Erosion and Sedimentation Control Plan

There will be a very limited need for erosion control. A silt fence shall be installed down gradient of the disturbed area. Once a grass stand is established the silt fence can be removed. The Contractor shall be responsible for installation of the silt fence.

2.9 Sealing of Main Inlet and Discharge Lines

Upon completion of item 2.7 the Control Plan Manager will request that the Contractor locate the main inlet line going into the plant and verify that all effluent in-flow has ceased. If it has ceased then the line shall be cut and sealed with non shrink grout. The discharge line shall also be located, cut, and sealed with non shrink grout.

2.10 Disassemble and Remove Plant Components

The Contractor shall coordinate with the Closure Plan Manager for removal and salvage of plant components, lab equipment, and chemicals. The RBC and Skimmer and related motors, Dechlorination unit, and discharge pumps shall be removed and salvaged. Within the lab building the aerator will be removed and salvaged. The lab testing equipment and dechlor tablets shall be removed and donated or sold. The chlorine cylinders shall be removed and sent back to the distributor.

Once the RBC, Skimmer, and Dechlorination unit are removed all remaining effluents and sludge within the related concrete holding tanks shall be pumped and hauled. Lime shall be applied as needed.

The Lab building shall remain standing to be used for storage. The electric service shall be altered to serve the storage building only. A section of the fence shall be taken down to allow for grading of the lagoons and shall be reinstalled once final seeding and mulching is done.

2.11 Final Filling and Grading

The Certification Engineer shall inspect and approve of all work completed thus far, before final grading is to begin. The manholes at the entrance of the plant shall be removed at least two feet below finish grade. The remaining manhole bottoms, the Sludge holding tank, RBC/Skimmer tank, and dechlorination pit shall be partially demolished and filled with crusher run and topped with soil.

Lagoon liners must be scarified so that the lagoons no longer hold water. The lagoon bottoms must be covered with at least two feet of fill material to be compacted with a loader as it is spread. . As the lagoons are graded and filled they should be compacted in no less than 12 inch lifts. The lagoons shall be graded to shed water. Fill dirt and top soil may need to be hauled in during the final grading process. If sludge remains in one or both lagoons after they are pumped down, then the area where sludge remains should then be topped with three inches of a slowly permeable material. The lagoon linersoil based material may be used for the cap. If sludge remains in the lagoon, the location of the sludge should be noted on the property deed.

2.12 Seeding and Mulching

The Closure Plan Manager will hire a landscaping contractor to finish, seed and mulch, all disturbed areas. Once a good stand of grass has been established, the silt fence shall be removed.

The chain link fence shall be reinstalled around the property.

3.0 COST ESTIMATES AND FINANCIAL ASSURANCES

A cost estimate for the Closure Plan is included in Attachment B. The owner will submit a financial assurance in the form of a Letter of Credit under separate cover. The cost estimate and Letter of Credit must be adjusted for inflation annually within 60 days of the anniversary date.

The closure standards assure that all possible actions have been taken to eliminate post-closure maintenance activities. The standards also minimize the potential for the release of decomposed waste products into the environment.

Attachment B

Activity Cost Estimates

1. Control Plan Manager Fees (6 months).....	\$2,500
2. Qualified Plant Operator Fees (4 months).....	1,600
3. Engineering/Inspection Fees.....	2,000
4. Chemicals/ other lab Costs.....	200
5. Monthly Test Fees (4 months).....	180
6. Pumping fees 1000 gallon tanks 30 x \$200.....	6,000
7. Pumping fees 5000 gallon tanks 4 x \$850.....	3,400
8. Pumping fees for 2 lagoons (estimate 30,000 gallons)....	4,000
\$1000 pump fee plus \$3000 dumping fee	
9. Contractor Fee.....	3,500
10. Lime.....	300
11. Fence Work.....	800
12. Crusher Run for Fill.....	800
13. Fill Dirt for lagoons.....	1,000
14. Top Soil.....	300
15. Silt Fence (To be Installed by Contractor).....	50
16. Cut and Plug Sewage Connections (107 x \$26).....	2,782
17. Final Grade, Seed, Mulch.....	1,000
18. Unforeseen costs/ cost overruns (10%).....	<u>3,251</u>
Total.....	\$33,663

Attachment A

With this written agreement Glen Micklem agrees to implement the Closure Plan of Bennies Mobile Home Park Sewage Treatment Plant. He agrees to be the Closure Plan Manager as described within the Closure Plan. Compensation of the Closure Plan Manager is also described within the Closure Plan.

This contract will only take effect in the event that the owners of Bennies Mobile Home Park Sewage Treatment Plant have abandoned the Plant and the State Water Control Board Determines that the Closure Plan Should be Implemented.

 1-18-05
Date

Glen Micklem
P.O. Box 1212
Madison Heights, VA 24572

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COMMONWEALTH of VIRGINIA

L. Preston Bryant, Jr.
Secretary of Natural Resources

DEPARTMENT OF ENVIRONMENTAL QUALITY
Street address: 629 East Main Street, Richmond, Virginia 23219
Mailing address: P.O. Box 1105, Richmond, Virginia 23218
Fax (804) 698-4500 TDD (804) 698-4021
www.deq.virginia.gov

David K. Paylor
Director

(804) 698-4000
1-800-592-5482

June 3, 2009

Mr. Bruce Bunnell
Bennie's Mobile Home Park STP
6080 Campbell Highway
Lynchburg, Virginia 24501

RE: Financial Assurance, VPDES Permit VA0061042

Dear Mr. Bunnell:

The Virginia Department of Environmental Quality has reviewed the letter of credit submitted by Bennie's Rentals, Inc. to demonstrate financial capability for privately owned sewerage systems owned and/or operated in the Commonwealth of Virginia. The closure cost estimate adjusted for 2009 inflation is \$37,377. Letter of credit number 9531656129/00004 was issued in the amount of \$40,000, therefore; Bennie's Rentals, Inc. has met its financial capability demonstration requirement until April 18, 2010.

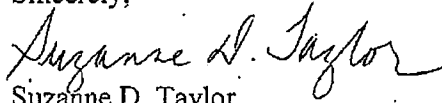
Please note that the obligation to update your financial assurance mechanism is an annual one. The Regulation requires an owner/operator to update the cost estimate annually for inflation within sixty days prior to the anniversary date of the mechanism. Your anniversary date is **April 18**. The cost estimate must be adjusted for inflation no later than **February 18, 2010**. The cost estimate is adjusted by multiplying the current cost estimate by the current year's inflation factor. You may call the Office of Financial Assurance at (804) 698-4146 sixty days prior to the effective date to obtain the inflation factor.

$\$37,377 \times 2010 \text{ inflation factor} = 2010 \text{ Adjusted Cost Estimate}$

If the 2010 adjusted cost estimate exceeds the amount of the existing letter of credit, you must submit either a new letter of credit or an amendment to the existing letter of credit in the amount of the adjusted cost estimate to the Department no later than April 18, 2010.

If you have any questions regarding the financial assurance requirements, please contact me at (804) 698-4146 (toll free in Virginia 800-592-5482 ext. 4146) or via email at suzanne.taylor@deq.virginia.gov. Thank you for your time and cooperation in this matter.

Sincerely,

A handwritten signature in cursive script that reads "Suzanne D. Taylor".

Suzanne D. Taylor
Office of Financial Assurance

c: Kevin Crider, DEQ/BRRO/L
David Miles, DEQ/BRRO/L

Attachment K

Public Notice

Public Notice – Environmental Permit

PURPOSE OF NOTICE: To seek public comment on a draft permit from the Department of Environmental Quality that will allow the release of treated wastewater into a water body in Campbell County, Virginia

PUBLIC COMMENT PERIOD: 30 days following the public notice issue date; comment period ends 4:30 pm of last day

PERMIT NAME: Virginia Pollutant Discharge Elimination System – Wastewater issued by DEQ, under the authority of the State Water Control Board

APPLICANT NAME, ADDRESS, AND PERMIT NUMBER: Bennie's Rentals Inc., 6080 Campbell Highway, Lynchburg, VA 24501, VA0061042

FACILITY NAME AND LOCATION: Bennie's Mobile Home Park STP, 6080 Campbell Highway, Lynchburg, VA 24501

PROJECT DESCRIPTION: Bennie's Rentals Inc. has applied for a reissuance of a permit for private Bennie's Mobile Home Park STP. The applicant proposes to release treated sewage wastewater from residential areas at a rate of 0.035 million gallons per day into a water body. Sludge from the treatment process will be hauled to a local wastewater treatment plant. The facility proposes to release the treated sewage wastewater into Opossum Creek in Campbell County in the James River/Beaver Creek/Back Creek Watershed (VAC-H05R). A watershed is the land area drained by a river and its incoming streams. The permit will limit the following pollutants to amounts that protect water quality: bacteria, organic matter, solids, dissolved oxygen.

HOW TO COMMENT: DEQ accepts comments by e-mail, fax, or postal mail. All comments must be in writing and be received by DEQ during the comment period. The public also may request a public hearing.

HOW TO COMMENT AND/OR REQUEST A PUBLIC HEARING: DEQ accepts comments and requests for public hearing by e-mail, fax, or postal mail. All comments and requests must be in writing and be received by DEQ during the comment period. Submittals must include the names, mailing addresses and telephone numbers of the commenter/requester and of all persons represented by the commenter/requester. A request for a public hearing must also include: 1) The reason why a public hearing is requested. 2) A brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requestor or those represented by the requester, including how and to what extent such interest would be directly and adversely affected by the permit. 3) Specific references, where possible, to terms and conditions of the permit with suggested revisions. A public hearing may be held, including another comment period, if public response is significant, based on individual requests for a public hearing, and there are substantial, disputed issues relevant to the permit.

CONTACT FOR PUBLIC COMMENTS, DOCUMENT REQUESTS, AND ADDITIONAL INFORMATION: Becky L. France; Virginia Department of Environmental Quality, Blue Ridge Regional Office, 3019 Peters Creek Road, Roanoke, VA 24019-2738; PHONE: (540) 562-6700; E-MAIL ADDRESS: becky.france@deq.virginia.gov; FAX: (540) 562-6725. The public may review the draft permit and application at the DEQ office named above by appointment or may request copies of the documents from the contact person listed above.

Attachment L
EPA Checksheet

**State "FY2003 Transmittal Checklist" to Assist in Targeting
Municipal and Industrial Individual NPDES Draft Permits for Review**

Part I. State Draft Permit Submission Checklist

In accordance with the MOA established between the Commonwealth of Virginia and the United States Environmental Protection Agency, Region III, the Commonwealth submits the following draft National Pollutant Discharge Elimination System (NPDES) permit for Agency review and concurrence.

Facility Name: Bennie's Mobile Home Park STP

NPDES Permit Number: VA0061042

Permit Writer Name: Becky L. France, DEQ-BRRO-Roanoke

Date: 12/7/09

Major ☐Minor ☒Industrial ☐Municipal ☒

I.A. Draft Permit Package Submittal Includes:

	Yes	No	N/A
1. Permit Application?	X		
2. Complete Draft Permit (for renewal or first time permit – entire permit, including boilerplate information)?	X		
3. Copy of Public Notice?		X	
4. Complete Fact Sheet?	X		
5. A Priority Pollutant Screening to determine parameters of concern?			X
6. A Reasonable Potential analysis showing calculated WQBELs?	X		
7. Dissolved Oxygen calculations?	X		
8. Whole Effluent Toxicity Test summary and analysis?			X
9. Permit Rating Sheet for new or modified industrial facilities?			X

I.B. Permit/Facility Characteristics

	Yes	No	N/A
1. Is this a new, or currently unpermitted facility?		X	
2. Are all permissible outfalls (including combined sewer overflow points, non-process water and storm water) from the facility properly identified and authorized in the permit?	X		
3. Does the fact sheet or permit contain a description of the wastewater treatment process?	X		

I.B. Permit/Facility Characteristics – cont. (FY2003)	Yes	No	N/A
4. Does the review of PCS/DMR data for at least the last 3 years indicate significant non-compliance with the existing permit?		X	
5. Has there been any change in streamflow characteristics since the last permit was developed?	X		
6. Does the permit allow the discharge of new or increased loadings of any pollutants?		X	
7. Does the fact sheet or permit provide a description of the receiving water body(s) to which the facility discharges, including information on low/critical flow conditions and designated/existing uses?	X		
8. Does the facility discharge to a 303(d) listed water?	X		
a. Has a TMDL been developed and approved by EPA for the impaired water?	X		
b. Does the record indicate that the TMDL development is on the State priority list and will most likely be developed within the life of the permit?			X
c. Does the facility discharge a pollutant of concern identified in the TMDL or 303(d) listed water? E. coli limit added to permit.	X		
9. Have any limits been removed, or are any limits less stringent, than those in the current permit?		X	
10. Does the permit authorize discharges of storm water?			X
11. Has the facility substantially enlarged or altered its operation or substantially increased its flow or production?		X	
12. Are there any production-based, technology-based effluent limits in the permit?		X	
13. Do any water quality-based effluent limit calculations differ from the State's standard policies or procedures?		X	
14. Are any WQBELs based on an interpretation of narrative criteria?		X	
15. Does the permit incorporate any variances or other exceptions to the State's standards or regulations?		X	
16. Does the permit contain a compliance schedule for any limit or condition?		X	
17. Is there a potential impact to endangered/threatened species or their habitat by the facility's discharge(s)?		X	
18. Have impacts from the discharge(s) at downstream potable water supplies been evaluated?	X		
19. Is there any indication that there is significant public interest in the permit action proposed for this facility?		X	
20. Have previous permit, application, and fact sheet been examined?	X		

Part II. NPDES Draft Permit Checklist (FY2003)

Region III NPDES Permit Quality Checklist – for POTWs (To be completed and included in the record only for POTWs)

II.A. Permit Cover Page/Administration

	Yes	No	N/A
1. Does the fact sheet or permit describe the physical location of the facility, including latitude and longitude (not necessarily on permit cover page)?	X		
2. Does the permit contain specific authorization-to-discharge information (from where to where, by whom)?	X		

II.B. Effluent Limits – General Elements

	Yes	No	N/A
1. Does the fact sheet describe the basis of final limits in the permit (e.g., that a comparison of technology and water quality-based limits was performed, and the most stringent limit selected)?	X		
2. Does the fact sheet discuss whether “antibacksliding” provisions were met for any limits that are less stringent than those in the previous NPDES permit?			X

II.C. Technology-Based Effluent Limits (POTWs)

	Yes	No	N/A
1. Does the permit contain numeric limits for <u>ALL</u> of the following: BOD (or alternative, e.g., CBOD, COD, TOC), TSS, and pH?	X		
2. Does the permit require at least 85% removal for BOD (or BOD alternative) and TSS (or 65% for equivalent to secondary) consistent with 40 CFR Part 133?	X		
a. If no, does the record indicate that application of WQBELs, or some other means, results in more stringent requirements than 85% removal or that an exception consistent with 40 CFR 133.103 has been approved?			X
3. Are technology-based permit limits expressed in the appropriate units of measure (e.g., concentration, mass, SU)?	X		
4. Are permit limits for BOD and TSS expressed in terms of both long term (e.g., average monthly) and short term (e.g., average weekly) limits?	X		
5. Are any concentration limitations in the permit less stringent than the secondary treatment requirements (30 mg/l BOD5 and TSS for a 30-day average and 45 mg/l BOD5 and TSS for a 7-day average)?		X	
a. If yes, does the record provide a justification (e.g., waste stabilization pond, trickling filter, etc.) for the alternate limitations?			X

II.D. Water Quality-Based Effluent Limits

	Yes	No	N/A
1. Does the permit include appropriate limitations consistent with 40 CFR 122.44(d) covering State narrative and numeric criteria for water quality?	X		
2. Does the fact sheet indicate that any WQBELs were derived from a completed and EPA approved TMDL?			X

II.D. Water Quality-Based Effluent Limits – cont. (FY2003)	Yes	No	N/A
3. Does the fact sheet provide effluent characteristics for each outfall?	X		
4. Does the fact sheet document that a “reasonable potential” evaluation was performed?	X		
a. If yes, does the fact sheet indicate that the “reasonable potential” evaluation was performed in accordance with the State’s approved procedures?	X		
b. Does the fact sheet describe the basis for allowing or disallowing in-stream dilution or a mixing zone?	X		
c. Does the fact sheet present WLA calculation procedures for all pollutants that were found to have “reasonable potential”?	X		
d. Does the fact sheet indicate that the “reasonable potential” and WLA calculations accounted for contributions from upstream sources (i.e., do calculations include ambient/background concentrations)?			X
e. Does the permit contain numeric effluent limits for all pollutants for which “reasonable potential” was determined?	X		
5. Are all final WQBELs in the permit consistent with the justification and/or documentation provided in the fact sheet?	X		
6. For all final WQBELs, are BOTH long-term AND short-term effluent limits established?	X		
7. Are WQBELs expressed in the permit using appropriate units of measure (e.g., mass, concentration)?	X		
8. Does the record indicate that an “antidegradation” review was performed in accordance with the State’s approved antidegradation policy?	X		

II.E. Monitoring and Reporting Requirements	Yes	No	N/A
1. Does the permit require at least annual monitoring for all limited parameters and other monitoring as required by State and Federal regulations?	X		
a. If no, does the fact sheet indicate that the facility applied for and was granted a monitoring waiver, AND, does the permit specifically incorporate this waiver?			X
2. Does the permit identify the physical location where monitoring is to be performed for each outfall?	X		
3. Does the permit require at least annual influent monitoring for BOD (or BOD alternative) and TSS to assess compliance with applicable percent removal requirements?		X	
4. Does the permit require testing for Whole Effluent Toxicity?		X	

II.F. Special Conditions	Yes	No	N/A
1. Does the permit include appropriate biosolids use/disposal requirements?	X		
2. Does the permit include appropriate storm water program requirements?			X

II.F. Special Conditions – cont. (FY2003)	Yes	No	N/A
3. If the permit contains compliance schedule(s), are they consistent with statutory and regulatory deadlines and requirements?			X
4. Are other special conditions (e.g., ambient sampling, mixing studies, TIE/TRE, BMPs, special studies) consistent with CWA and NPDES regulations?	X		
5. Does the permit allow/authorize discharge of sanitary sewage from points other than the POTW outfall(s) or CSO outfalls [i.e., Sanitary Sewer Overflows (SSOs) or treatment plant bypasses]?		X	
6. Does the permit authorize discharges from Combined Sewer Overflows (CSOs)?			X
a. Does the permit require implementation of the “Nine Minimum Controls”?			X
b. Does the permit require development and implementation of a “Long Term Control Plan”?			X
c. Does the permit require monitoring and reporting for CSO events?			X
7. Does the permit include appropriate Pretreatment Program requirements?			X

II.G. Standard Conditions		Yes	No	N/A
1. Does the permit contain all 40 CFR 122.41 standard conditions or the State equivalent (or more stringent) conditions?		X		
List of Standard Conditions – 40 CFR 122.41				
Duty to comply	Property rights	Reporting Requirements		
Duty to reapply	Duty to provide information	Planned change		
Need to halt or reduce activity	Inspections and entry	Anticipated noncompliance		
not a defense	Monitoring and records	Transfers		
Duty to mitigate	Signatory requirement	Monitoring reports		
Proper O & M	Bypass	Compliance schedules		
Permit actions	Upset	24-Hour reporting		
		Other non-compliance		
2. Does the permit contain the additional standard condition (or the State equivalent or more stringent conditions) for POTWs regarding notification of new introduction of pollutants and new industrial users [40 CFR 122.42(b)]?			X	

Part II. NPDES Draft Permit Checklist (FY2003)

Region III NPDES Permit Quality Review Checklist – For Non-Municipals (To be completed and included in the record for all non-POTWs)

II.A. Permit Cover Page/Administration

	Yes	No	N/A
1. Does the fact sheet or permit describe the physical location of the facility, including latitude and longitude (not necessarily on permit cover page)?			
2. Does the permit contain specific authorization-to-discharge information (from where to where, by whom)?			

II.B. Effluent Limits – General Elements

	Yes	No	N/A
1. Does the fact sheet describe the basis of final limits in the permit (e.g., that a comparison of technology and water quality-based limits was performed, and the most stringent limit selected)?			
2. Does the fact sheet discuss whether “antibacksliding” provisions were met for any limits that are less stringent than those in the previous NPDES permit?			

II.C. Technology-Based Effluent Limits (Effluent Guidelines & BPJ)

	Yes	No	N/A
1. Is the facility subject to a national effluent limitations guideline (ELG)?			
a. If yes, does the record adequately document the categorization process, including an evaluation of whether the facility is a new source or an existing source?			
b. If no, does the record indicate that a technology-based analysis based on Best Professional Judgement (BPJ) was used for all pollutants of concern discharged at treatable concentrations?			
2. For all limits developed based on BPJ, does the record indicate that the limits are consistent with the criteria established at 40 CFR 125.3(d)?			
3. Does the fact sheet adequately document the calculations used to develop both ELG and /or BPJ technology-based effluent limits?			
4. For all limits that are based on production or flow, does the record indicate that the calculations are based on a “reasonable measure of ACTUAL production” for the facility (not design)?			
5. Does the permit contain “tiered” limits that reflect projected increases in production or flow?			
a. If yes, does the permit require the facility to notify the permitting authority when alternate levels of production or flow are attained?			
6. Are technology-based permit limits expressed in appropriate units of measure (e.g., concentration, mass, SU)?			

II.C. Technology-Based Effluent Limits (Effluent Guidelines & BPJ) – cont.	Yes	No	N/A
7. Are all technology-based limits expressed in terms of both maximum daily, weekly average, and/or monthly average limits?			
8. Are any final limits less stringent than required by applicable effluent limitations guidelines or BPJ?			

II.D. Water Quality-Based Effluent Limits	Yes	No	N/A
1. Does the permit include appropriate limitations consistent with 40 CFR 122.44(d) covering State narrative and numeric criteria for water quality?			
2. Does the record indicate that any WQBELs were derived from a completed and EPA approved TMDL?			
3. Does the fact sheet provide effluent characteristics for each outfall?			
4. Does the fact sheet document that a “reasonable potential” evaluation was performed?			
a. If yes, does the fact sheet indicate that the “reasonable potential” evaluation was performed in accordance with the State’s approved procedures?			
b. Does the fact sheet describe the basis for allowing or disallowing in-stream dilution or a mixing zone?			
c. Does the fact sheet present WLA calculation procedures for all pollutants that were found to have “reasonable potential”?			
d. Does the fact sheet indicate that the “reasonable potential” and WLA calculations accounted for contributions from upstream sources (i.e., do calculations include ambient/background concentrations where data are available)?			
e. Does the permit contain numeric effluent limits for all pollutants for which “reasonable potential” was determined?			
5. Are all final WQBELs in the permit consistent with the justification and/or documentation provided in the fact sheet?			
6. For all final WQBELs, are BOTH long-term (e.g., average monthly) AND short-term (e.g., maximum daily, weekly average, instantaneous) effluent limits established?			
7. Are WQBELs expressed in the permit using appropriate units of measure (e.g., mass, concentration)?			
8. Does the fact sheet indicate that an “antidegradation” review was performed in accordance with the State’s approved antidegradation policy?			

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II.E. Monitoring and Reporting Requirements (FY2003)	Yes	No	N/A
1. Does the permit require at least annual monitoring for all limited parameters?			
a. If no, does the fact sheet indicate that the facility applied for and was granted a monitoring waiver, AND, does the permit specifically incorporate this waiver?			
2. Does the permit identify the physical location where monitoring is to be performed for each outfall?			
3. Does the permit require testing for Whole Effluent Toxicity in accordance with the State's standard practices?			

II.F. Special Conditions	Yes	No	N/A
1. Does the permit require development and implementation of a Best Management Practices (BMP) plan or site-specific BMPs?			
a. If yes, does the permit adequately incorporate and require compliance with the BMPs?			
2. If the permit contains compliance schedule(s), are they consistent with statutory and regulatory deadlines and requirements?			
3. Are other special conditions (e.g., ambient sampling, mixing studies, TIE/TRE, BMPs, special studies) consistent with CWA and NPDES regulations?			

II.G. Standard Conditions	Yes	No	N/A
1. Does the permit contain all 40 CFR 122.41 standard conditions or the State equivalent (or more stringent) conditions?			
List of Standard Conditions – 40 CFR 122.41			
Duty to comply	Property rights	Reporting Requirements	
Duty to reapply	Duty to provide information	Planned change	
Need to halt or reduce activity	Inspections and entry	Anticipated noncompliance	
not a defense	Monitoring and records	Transfers	
Duty to mitigate	Signatory requirement	Monitoring reports	
Proper O & M	Bypass	Compliance schedules	
Permit actions	Upset	24-Hour reporting	
		Other non-compliance	
2. Does the permit contain the additional standard condition (or the State equivalent or more stringent conditions) for existing non-municipal dischargers regarding pollutant notification levels [40 CFR 122.42(a)]?			

Part III. Signature Page (FY2003)

Based on a review of the data and other information submitted by the permit applicant, and the draft permit and other administrative records generated by the Department/Division and/or made available to the Department/Division, the information provided on this checklist is accurate and complete, to the best of my knowledge.

Name	<u>Becky L. France</u>
Title	<u>Environmental Engineer Senior</u>
Signature	<u>Becky L. France</u>
Date	<u>4/8/10</u>